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A Provisional Patent Application

# Web Application for Designing and Ordering Flexible Content Arrays

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# 1 INTRODUCTION

The Software Requirements Specification (SRS) will outline the requirements and functional characteristics of the Flexible Content Software, Version 1.0.
The Flexible Content Software will perform the following two functions:

- Provide an interface for an external/internal customer to request a Flexible Content Array Design through the Internet. This is the Flexible Content Array designer (FCA) application.
- Provide an interface for a chip designer to perform a Subset design based on the information a customer submitted online. This is the SubsetDesign application.

## 1.1 Purpose

The purpose of this requirement specification is to define the system level requirements for the Flexible Content Software. The system level requirements include a description of the components, features, functions and interface requirements.

## 1.2 Scope

The intended audience of this document includes the following groups:

- Software Engineering
- Software Test
- Marketing
- Quality Assurance

## 1.3 Definitions, Acronyms, and Abbreviations

| | |
|---|---|
| Custom Design | The design of an expression array based on sequences and instructions provided by a customer. |
| Subset Design | The design of an expression array based on probe sets from existing designs. |
| Flexible Content Design | Designs with a tight turn-around time of 4 weeks or less using an offset mask strategy. Initially, this will only include subset designs, but can later be expanded to include designs that include a mixture of subset and custom designs. |
| CSR | Customer Service Representative |
| PO | Purchase Order |
| SO # | Sales Order number stored in Affymetrix QAD |
| Chip Orders | The centralized email box for Chip Design. |
| CDD | Chip Design Database, where ALL chip design related information is stored. |
| EASImart | Database mart used to stored array design information; shared with the Matrix (Portal) project. |



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| | |
|---|---|
| FCdb | Flexible Content Database, used to stored all data used to support the online portion of the Flexible Content application. |
| T&Cs | Terms and Conditions |

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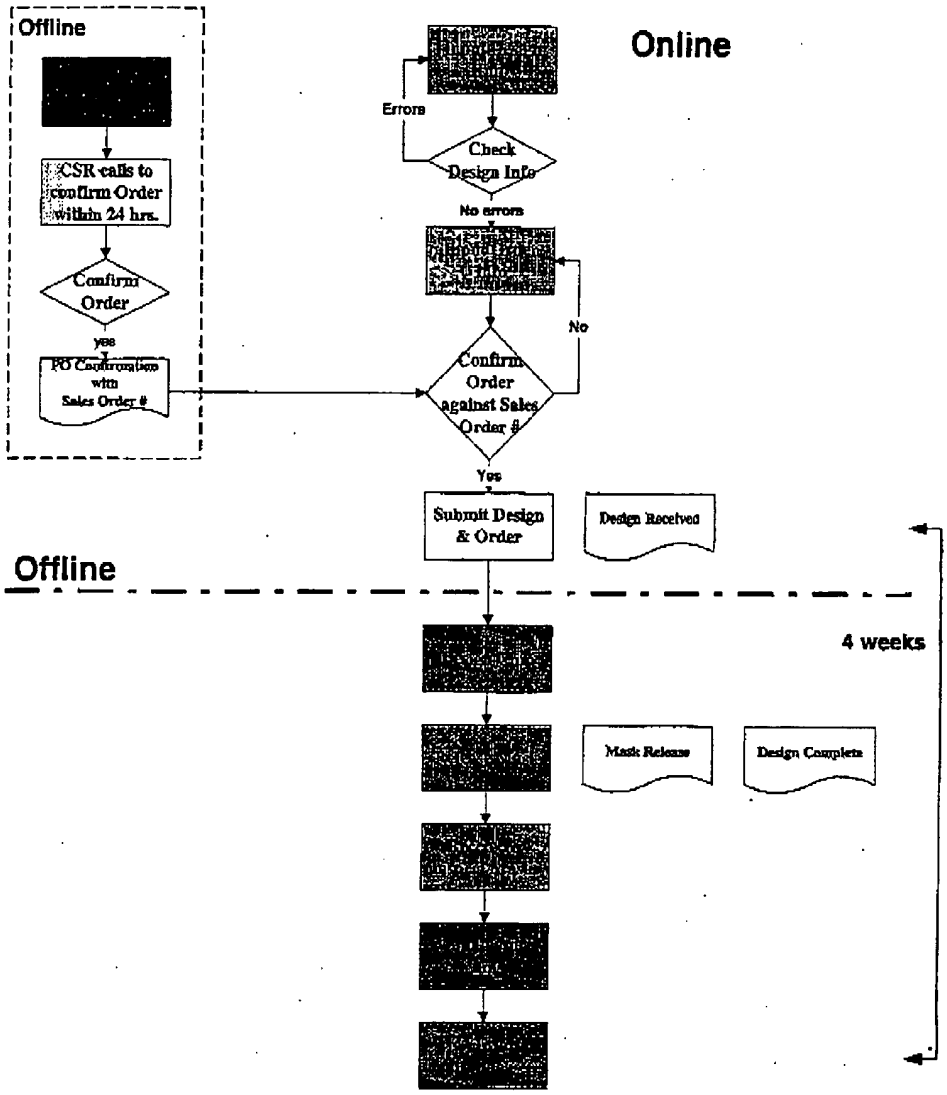
## 1.4 Overview




The process flow for a Flexible Content Design is designed to mirror that of the current Custom Design process. The online Flexible Content Array designer (FCA) portion is new, which is to ensure that a user will have an easier time putting together a design request, and that the design information is correct as they come into Chip Design. Since this is a quick turn-around design, it is essential that the data are correct when they come in, so that no

time will be wasted on correcting the Design Request. All currencies currently supported by Affymetrix will be supported by the FCA application. The currency is set based on the customer's billing address.

In order to guarantee that the online order is valid, a manual offline process is still used to qualify the Purchase Order. The Purchasing Agent from the requestor's company must send Affymetrix a PO detailing the design request fee and the number of chips to purchase. Affymetrix CSR will confirm the order and generate a Sales Order number in QAD. The SO# will be communicated to Chip Design and the Purchasing Agent, as well as the requestor. Chip Design will input the SO# into FCdb, and the customer is required to put in the same SO# for their design request. The web application will then check the SO# against FCdb. Only with this valid SO#, the requestor will be able to complete the design request online. This manual process is put in place to make sure that time will not be lost because the PO is not valid.

The second part of the process, SubsetDesign, is offline, and is handled by Chip Design. The process will be just like a current Custom Design, so that we can make sure all hand-offs are handled correctly. We have four weeks to deliver the products to the customer's site from the time a design comes in.

There are three key milestones during the Chip Design process. At each milestone, an email message will be sent to the relevant recipient to communicate the status of the design.

1. ***PO Confirmation***: when a CSR confirms the PO with the requestor/purchasing agent, an email is sent to Chip Orders with the SO#. The same SO# is also communicated to the requestor/purchasing agent so that the requestor can use the SO# to complete his/her online design request.
2. ***Design Received***: when a requestor completes the FCA correctly, an email message is sent out to the Requestor, Customer Service, Chip Design, and Purchasing. The 4-week countdown starts from here. If Purchasing wants to assign a different mask vendor other than the default used for Flexible Content designs, they notify Chip Design upon receipt of this email message.
3. ***Mask Order Form / Mask Release / Design Complete***: when the design is complete, Chip Design sends out "Mask Order Form" to the mask supplier, "Mask Release" to internal Affymetrix departments, and "Design Complete" message to the external requestor. The mask data go out to the mask supplier at this point.

**1.5 Reference**

CSOP AX028: Probe Array Design Request Process
DOP AC004: Chip Design Process



Faxed and Received

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## 2 General Description

### 2.1 Product Perspective

The Flexible Content Software, Version 1.0, will provide the mechanism for a chip designer to perform a Flexible Content Design based on customer specifications. The software will support design data specifying a set of probe sets from existing designs.

The software will analyze the customer's design data and generate an array to the specifications. Front-end support (online) will allow the user to produce, check and order a Flexible Content Design online. The back-end (offline) software will generate the files required for manufacturing and analysis.

### 2.2 Product Functions

#### *2.2.1 Flexible Content Array designer (FCA)*

The Flexible Content Array designer (FCA) is the online application that will guide a user to produce a Design Request for a Flexible Content Array design. It will also allow more advanced users to upload a list of probe sets they have already created. The application will then check to make sure that the content and syntax are correct. If that is the case, it will guide the user through the ordering process and notify the correct parties of a new design by sending a "Design Received – Due Date Set" message to Chip Orders and the requestor. Chip Orders will automatically forward this message to the appropriate internal Affymetrix departments, including CSR, Materials and Manufacturing. Based on the array information received, a Chip Designer can log on to the application and download the correct design into a local driver for processing.

#### *2.2.2 SubsetDesign*

The SubsetDesign (offline) application will take the Subset Request File from the FCA application and the related design information to produce a set of output files. These output files will be used with the existing Chip Design software to do the mask design and to generate the library files for analysis.

### 2.3 General Constraints, Assumptions and Dependencies

#### *2.3.1 Standards*

To ensure comparable quality from array to array, the following standards are enforced on ALL Flexible Content Designs:

- the format of the mask will be 100/9 to begin with; other formats will become available later
- default mask material: Quartz
- default mask supplier: Photo Sciences



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- 75 synthesis steps
- antisense designs only
- 20 micron feature size
- probe sets derived from TIGR sequences will NOT be available
- 4 QC arrays from each wafer will not be sent to customers. These four arrays contain specific QC control probes.
- controls on each array:
  1. Corner checkerboard
  2. Spaced normalization controls: 6 x 6 grid
  3. Text: the array name supplied by the customer will be the text shown on the array. The array name can be up eight characters long.
  4. All Chips controls in a standard block, not distributed: bioB, bioC, bioD, cre
  5. All Chips controls: dap, lys, phe, thr, trp
  6. Constitutively expressed controls: for each different species where the probe sets come from, the following species-specific controls will be tiled on the chip. If duplicated control(s) have already been selected in the customer's list, the duplicates will be eliminated.
     - Arabidopsis: actin 3, 5, M; gapdh 3, 5, M
     - Drosophila: actin 3, 5, M_f, M_r; gapdh 3, 5, M
     - Human: actin 3, 5, M; gapdh 3, 5, M
     - Mouse: actin 3, 5, M; gapdh 3, 5, M
     - Rat: actin 3, 5, M; gapdh 3, 5, M
     - Yeast: actin 3, 5, M

### 2.3.2 *Constraints*

- The first phase implementation will NOT include sequence blasting capabilities when a search is performed.
- Design requests will NOT go directly into the CDD in the first phase implementation.
- Subset designs will NOT be produced directly from the CDD, nor FCdb in the first phase implementation.
- The web browsers supported will be Internet Explorer 4.0 or higher, and Netscape Communicator 4.5 or higher.

### 2.3.3 *Dependencies*

- The Portal project will provide the sequence blasting capabilities the Flexible Content needs. Tighter integration will be necessary to make the communication between the two applications seamless in a later phase.
- FCdb will extract array-related information from the EASImart.



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- The backend SubsetDesign will use released Analysis Files for input, instead of the database. It is assumed that EASImart and the Analysis Files will contain consistent information.
- The new probe selection rules will dictate the final design of a new CDD. Once the new CDD is loaded with data, the Flexible Content software will be inputting the Design Request directly into the database, and exporting the final manufacturing and analysis files directly from the database.

## 3 User Scenarios

### 3.1 Invalid Browser

If the user accesses the Flexible Content site using a browser not supported by the application (Netscape 4.5 or higher, Internet Explorer 4.0 or higher), the user will be warned. Links for Netscape Navigator and Microsoft Internet Explorer are also provided.

### 3.2 New User

When a user access the Flexible Content site without a valid user ID and/or password, he/she may sign up following the registration process for the Portal. A user qualified as "customer/partner" by the Portal will automatically gain access to Flexible Content. However, if billing and/or shipping addresses are missing for that particular user, the user will be directed to update the profile first.

### 3.3 Login and Order

Once logged in, a user has two ways to start a design request. First, upload a file containing a list of desired probe sets (from past experiments and/or various searches performed using Affymetrix tools). If the file format is not correct, error(s) will be displayed. It will also show link to the file description for a Probe Set File. Once uploaded, the data in the file will be checked against FCdb. If a probe set cannot be located, it will be deleted from the list, and the user will be notified of the deletion. If a probe set can be located, but for a different design than the one indicated, the information will be shown to the user, and he/she may elect to add it to the list. If a probe set can be located in more than one design (using the probe set name as the only criterion), all designs with the same probe set name will be listed. Alternatively, if the user provides the same probe set name multiple times, this duplicated error will also show up. The user may elect just one set, or elect multiple sets by giving a distinct name to each set selected.

The second way is to perform a search and select the desirable probe sets returned by the query. The user must provide at least one criterion in order to search. When multiple criteria are selected, the query will search ALL or ANY of those criteria against FCdb. The query results will be displayed but not



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selected. The user may select one or more probe sets returned and add them to the design request.

The file load and searches can also be combined. Species specific controls will be added to the design request based on the probe sets selected. If these controls have already been selected by the user, then they will NOT be duplicated.

At all time during the design request, the maximum number of available probe pairs will be shown. The total number of probe pairs selected will be updated continuously. The application will alert the user if the total goes over the maximum. The user will NOT be able to complete the order if the total is over the maximum.

The user must provide an array name and description for each design request. This custom array name can be up to 8 alphanumeric characters long. The official array name (used by Affymetrix) will be generated by adding a two-letter customer specific code to the beginning of the custom array name, and a one letter code "F" (to denote fast track). The official array name will be checked against the database to make sure it is unique.

In order to proceed with the order, a user must put in a SO#. This SO# is generated offline by the CSR, and must be obtained before the order can go through. This SO# is checked against the database to make sure it is valid.

Once the user enters the number of arrays ordered, the total order will be calculated and shown. This amount is only an **estimate**. The final invoice will be based on the number of actual chips shipped to the requestor. The currency used will be based on the billing address.

At any time BEFORE the completion of the order, the user may view and/or save all the probe sets selected for a particular design request. The file saved will be in a tab-delimited text file format. They may also save a copy of a mock PO showing the array name, description, and order amount for the design request. This mock PO will be in a HTML/text format.

Before the final confirmation for the order, the user will be shown the info for design request. Once confirmed, an email notification will go out to Chip Design and the requestor. It will be automatically forwarded to CSR, Materials and Manufacturing. A Chip Designer can download the correct design by logging on and provide the array name and file path.

### 3.4 Logout without Ordering

When a user logs out without ordering, the request will be treated as an incomplete order.



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### 3.5 Incomplete Orders

When a user logs in, if there are incomplete order(s) associated with that user, the orders will be shown. The user may choose to work on one of them at a time, work on a new request, or to purge them all from the database.

### 3.6 Feedback

Feedback will be incorporated through the Portal.

### 3.7 Support

Contact information for support will be combined with the contact for the Portal.

## 4 Flexible Content Array Designer (FCA)

### 4.1 Security

The web application will be hosted on a secured server. All users are required to login before they can access the site to start a design. The user login function will be shared with the Portal project. In addition, each page has a specific access level. When accessing, the user's access level will be checked against that of the web page to make sure that the user has the right to view a particular page. The access rights are shared with the Portal project.

### 4.2 Page Description

#### *4.2.1 Browser Check*

Before accessing the Flexible Content home site, the user's browser will be checked by the application. If the Browser used is not Netscape Communicator 4.5 or higher, or Internet Explorer 4.0 or higher, the user will be warned. The user may click on the links to download the supported browsers.

#### *4.2.2 Flexible Content Home*

The Home page displays any Incomplete Orders, as well as providing a mean for users to start working on a new design. If the billing and/or shipping addresses are missing, the user will be redirected to the Profile page to add the required information.

For a new request, the array name and array description must be provided. The array name is up to 8 characters long (alphanumeric plus hyphens). A two-letter company code prefix and "F" suffix will be added to this array name to make the official array name. This official name will be checked against the database for uniqueness. If it is not unique, the user will be alerted to enter a new name. This official array



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name will also be the text on the array. The array description is limited to 255 characters long.

#### *4.2.3 FAQ*
This page shows the FAQ's for Flexible Content.

#### *4.2.4 Tutorials*
This page contains tutorials for Flexible Content.

#### *4.2.5 Contact*
This page is shared with the Portal, and shows the contact information for Flexible Content related help.

#### *4.2.6 Privacy Policy*
This page contains the Affymetrix Privacy Statements regarding user information collected online. It is shared with the Portal project.

#### *4.2.7 Terms & Conditions*
This page contains the standard Terms and Conditions that a customer has signed when registering for the online use.

#### *4.2.8 Feedback*
This page is incorporate through the Portal project.

#### *4.2.9 Register*
This page allows a new user to sign up online for a new user id and password. This process is handled by the Portal project.

#### *4.2.10 Login*
This page allows a user to log in. This function is shared with the Portal.

#### *4.2.11 Upload Probe Set File*
This page allows a user to load a tab delimited text file containing probe set information.

#### *4.2.12 Invalid File*
This page appears if the Probe Set File loaded cannot be processed correctly. The error message will point the user to the instructions on how to prepare a Probe Set File.

#### *4.2.13 Probe Set Not Found*
This page shows any probe sets in the Probe Set File that cannot be found in the database. These probe sets will not be added to the design request.



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#### *4.2.14 Probe Set Misidentified*

This page shows any probe sets in the Probe Set File that can be found, but not for the array specified. The correct information is shown for these probe sets, and the user may elect to add one or more of these probe sets to the design request.

#### *4.2.15 Duplicated Probe Set*

This page shows any duplicated probe sets in the Design Request without a unique name, or cannot be identified uniquely in the database by the information given. For example, if someone enters probe set "12345_at" multiple times, even if this probe set occurs only once in the database, it is a duplicate. On the other hand, if someone enters a probe set "3857_at" only once in the database without any additional information, and there are three probe sets in FCdb matching that name, this will also be treated as a duplicate.

#### *4.2.16 Probe Set List*

This page lists the probe set information. It has two states:

- Verified probe sets loaded from the Probe Set File – all the probe sets are shown as selected. A user may deselect one or more probe sets from the design.
- Summary of what has been saved as the design so far – this is activated through clicking on the "View Design" button in the Navigator page, or through the Modify Design button in various pages. All the probe sets are just like those loaded from the Probe Set File.

#### *4.2.17 Probe Set List - search results*

This page lists the query results from the Search page – all the probe sets shown are not selected. A user may select one or more probe sets to add to the design.

#### *4.2.18 Search*

This page allows the user to search the available arrays by the following criteria to come up with a design:

- Array description / Array name
- Part number
- Probe set name (inexact match, case-insensitive)
- Key word(s) in probe set description (inexact match, case-insensitive)
- Public database identifier (exact match, case insensitive)

Array description/array name fields is a multi-selection list. The user may specify to query ALL or ANY of the criteria entered. In the future,



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this page will integrate with the Portal to allow users to search by blasting sequences also.

***4.2.19 Order***

This page shows the general summary of the design. It allows a user to enter the relevant order information before submitting the order to Affymetrix. The currency shown will be based on the user's billing address. In order to complete the ordering process, the user must obtain a valid Sales Order number before the design submission. This Sales Order number is generated by Affymetrix Customer Service, and is entered into the FCdb manually once the CSR approves the PO. In the future, this Sales Order number should be automatically obtained from the QAD in real time.

This page also allows the user to modify their array name and descriptions, as well as modifying the probe sets in the design.

***4.2.20 Invalid Sales Order***

This page shows the error messages related to the Sales Order:

1) Order without any actual probes in the design request
2) Order with too many probes than the space allowed
3) sales order number not found
4) total order amount exceeds the PO approved

***4.2.21 Order Verification***

This page shows ALL information related to the design request one last time, including the PO, billing and shipping addresses, as well as probe sets info in the design request. It also warns the user that once submitted, this design request cannot be modified or canceled.

If the user is not happy with the probe sets at this point, he/she can hit the "Modify Design" button and make additional changes.

***4.2.22 Order Confirmation***

This page confirms the successful submission of the Flexible Content design. An email message will be automatically sent out to the requestor and Chip Design with the order information, with "Design Received – Due Date Set" as part of the subject. The email will be forwarded to internal Affymetrix departments automatically, including CSR, Materials, and Manufacturing.

***4.2.23 Incomplete Orders***

This info is shown on the Main page, as well as the Order Confirmation page. It shows all the incomplete orders associated with a particular user. It allows the user to pick one design to work on at a time, to start



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a completely new design, or to purge all the design related information currently in the database. A warning will appear before proceeding to ask the user to confirm if he/she really wants to erase ALL existing orders.

#### *4.2.24 Design Info*

This info is shown on the Upload, Search, Probe Set List, Probe Set List-Search, Order, and Order Verification pages. It shows the maximum number of probes allowed, and keeps a tally of the running total of probes in the design request.

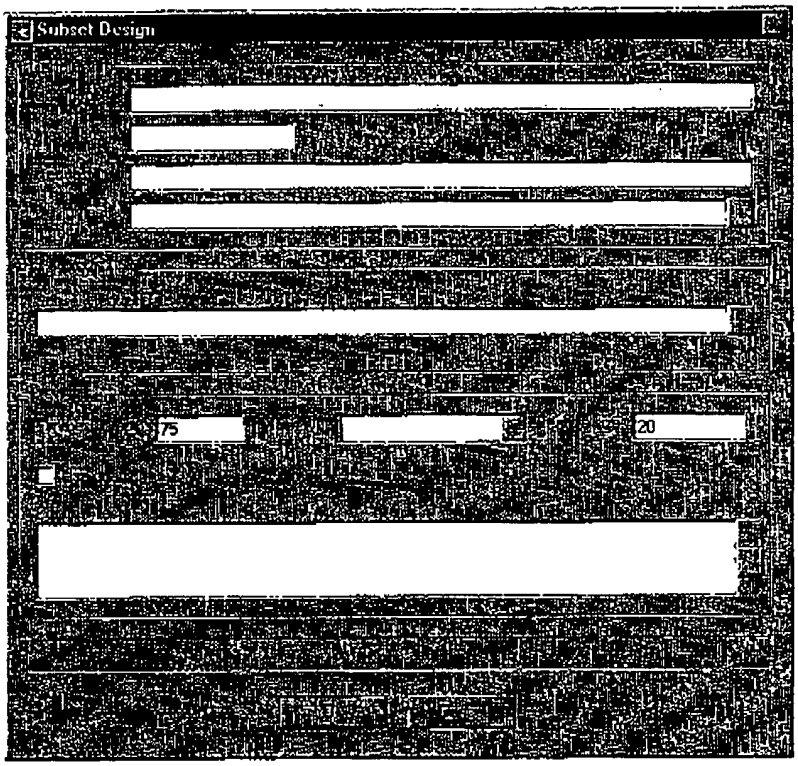
#### *4.2.25 Chip Design Download*

This page allows a chip designer to go online and download the subset request file for an array.

60301298.060504

# 5 SUBSETDESIGN

## 5.1 User Interface Requirements




## 5.2 Security

Access to the SubsetDesign application is only available to Chip Design in Affymetrix.

## 5.3 Functionality

The Subset Design application has the following fields:

| Field Name | Field Type | Description |
|---|---|---|
| Comment | Text | Any comment for the design |
| Mask ID | Text | Mask ID assigned by the Chip Designer. The application will access the *availableMasks.txt* file, find the corresponding Mask ID, and read in the Array Name, Array Description and Part Number. The Array Name will be used as the text on the array. |



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| Field Name | Field Type | Description |
|---|---|---|
| Requestor | Text | Name and company of the requestor. This information will be written as part of the output in the <AUT> file, as an input to Maiar. |
| Design Path | Text | The file path of the design where all the output files will be stored. The general path is: Q:\alldes\cdesign\<companyCode><Mask ID> |
| Subset Request File | Text | The Instruction File outputted by the FCA application. |
| Synthesis steps | Text | Number of synthesis steps to produce the design. The default is 75. This is the standard for all current Subset designs. |
| Mask type | Selection | The format of the mask. The current choices are 100/9 and 400/4. The current option for Subset designs is only 100/9. |
| Feature size | Text | The feature size for the design. The default is 20 micron. |
| Use quartz | Checkbox | The mask material. When checked, Quartz is used; when unchecked, Soda Lime is used. |
| Control Files | Multi-selection | Additional controls to be tiled on the array. The two AllChips controls will be added automatically. Species specific controls will be added by the Chip Designer. |
| OK | Button | Checks the Subset Request File. If everything is okay, write the output files to the Design Path. |
| Cancel | Button | Cancels the execution. |

### *5.3.1 Design Checks*

The checking performed by the application includes the following:

- The array name is correct, and the associated Analysis Files exist. *DataPaths.txt* contains a list of all the existing designs and the file path for their associated Analysis Files.
- The probe sets listed can be found in the Analysis Files for the array design listed.



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- Probe set names are unique; or, if there are duplicated probe set names, a "Rename" column exists to give unique names for all probe sets to be tiled onto the array.
- If "Rename" is used, the last three characters (suffix denoting the target strandedness of the probe set) are the same as that of the original probe set name.
- Additional controls to be tiled onto the array. If there are duplicated controls in the Subset Request File, then the duplicates will be eliminated (but not the renamed duplicate controls).

### *5.3.2 Design Output*

5.3.2.1 <AUT> File

Input to Maiar, the application that starts the mask design process. It contains information about the requestor, array name, description, part number, and synthesis direction.

By default, all designs are to be synthesized in the reverse direction. If a design contains only sense probe sets, then it will be synthesized in the forward direction. In the case of a mixed design (where there are both sense and antisense probe sets), the sense probe sets will be tiled on reverse-complemented and synthesized in the reverse direction (using the "orientedExp" command).

The <AUT> file produced will point to the correct mask template for a subset design, which includes a mini-design for QC chips. QC controls (bioB, bioC, bioD, cre) are to be put in a box at a fixed location in every array. These probes are NOT to be distributed. All other probes on the array will be distributed as normal. CheckMask application will be run twice for every design. It checks the normal arrays that will be sent to the customer, as well as the mini-QC arrays.

The text on the array will be the **array name** produced by Affymetrix. It contains the name supplied by the requestor, which is up to 8 characters long. The official array name (used by Affymetrix) appends a 2-letter code in front (which is company specific), and a 1-letter code at the end of the original name "F", which denotes fast track. For example, an antisense design from Roche with the original name as "Test1" will have the official name as "roTest1F". The text on the array will be "roTest1F".



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5.3.2.2 <IIN> File
Linked to the <AUT> file. The <IIN> file is the input to the CreateChip application.

5.3.2.3 (PRB) Probe File
List of all the probes corresponding to the probe sets requested in the Subset Request File.

5.3.2.4 Sequence File
Sequences corresponding to the probe sets listed in the Probe File in FASTA format.

5.3.2.5 Instruction File
Instructions corresponding to the Sequence File. The Sequence File and Instruction File are produced so that they can be used to generate the Analysis Files with the current LibFiles application.



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# 6 APPENDIX

## 6.1 Flexible Content Database

The Flexible Content Database (FCdb) is designed to support functionality through Phase III. Please refer to the Flexible Content Database documentation for detail (FCdb_db2.doc)

## 6.2 Initial Offerings

There are **23 eukaryotic catalog designs available** for the Phase I launch.

- AtGenome1 Arabidopsis Genome Array
- DrosGenome1 Drosophila Genome Array
- HG-U95Av2 Human Genome U95Av2 Array
- HG-U95B-E Human Genome B-E Arrays
- Hu35KsubA-D Human 35K A-D Arrays
- HuGeneFL HuGeneFL Array
- MG-U74Av2-Cv2 Murine Genome U74 Av2, Bv2, Cv2 Arrays
- Mu11KsubA-B Murine 11K A-B Arrays
- RN-U34 Rat Neurology U34 Array
- RG-U34A-C Rat Genome U34 Arrays
- RT-U34 Rat Toxicology Array
- YG-S98 Yeast Genome S98 Array

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### 6.3 Probe Set File

The Probe Set File contains the following columns:

1. ProbeSetName: the name of the probe set
2. ArrayName: the name of the array design where the probe set comes from
3. ArrayDescription: the description of the array design
4. PartNumber: the part number of the array
5. Rename: if a probe set name is duplicated in a design, a new name must be assigned to the duplicated item using the value in this column. If two probe sets are duplicated, only the second one needs a value in "rename".

The only mandatory column is ProbeSetName. This is basically a Subset Request File if all the data is correct. It will be the input to the FCA application. All probe sets listed will be checked by the application. It will get turned into a Subset Request File as an output.

### 6.4 Subset Request File

The Subset Request File contain the following tab-delimited columns:

1. ProbeSetName
2. ArrayName
3. Rename

ProbeSetName and ArrayName are mandatory. Rename is only mandatory when there are duplicated probe set names in the ProbeSetName column.



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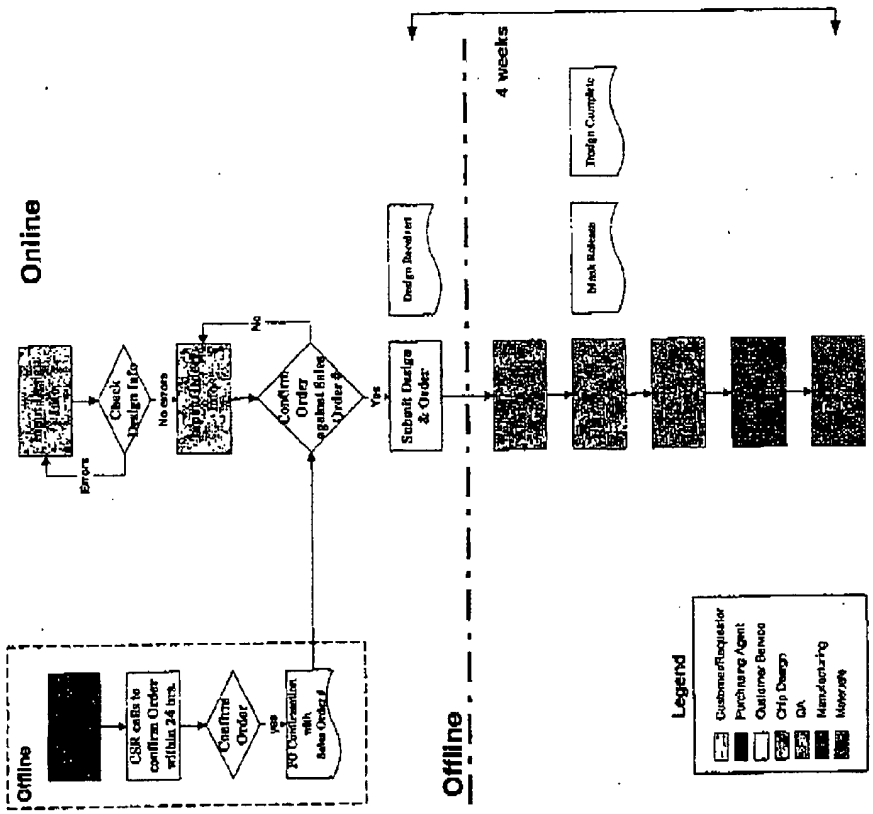
# Business Process Flow

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TOSZ90 * 8627050

# Software Design Requirements

## ➢ Online Error Checking

- Secured Work Environment
- Upload Design Request File
- Create Request Online
- TIGR Probe Sets Not Available
- Save Validated File
- Mandatory Controls
- Error Checking Without Ordering

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TOSHIBA-0052

# Software Design Requirements

- continued

## ➢ Online Ordering

- Display Order Info
- Support Foreign Currencies
- Email Notification

## ➢ Offline Chip Design

- Perform Chip Design Quickly and Accurately



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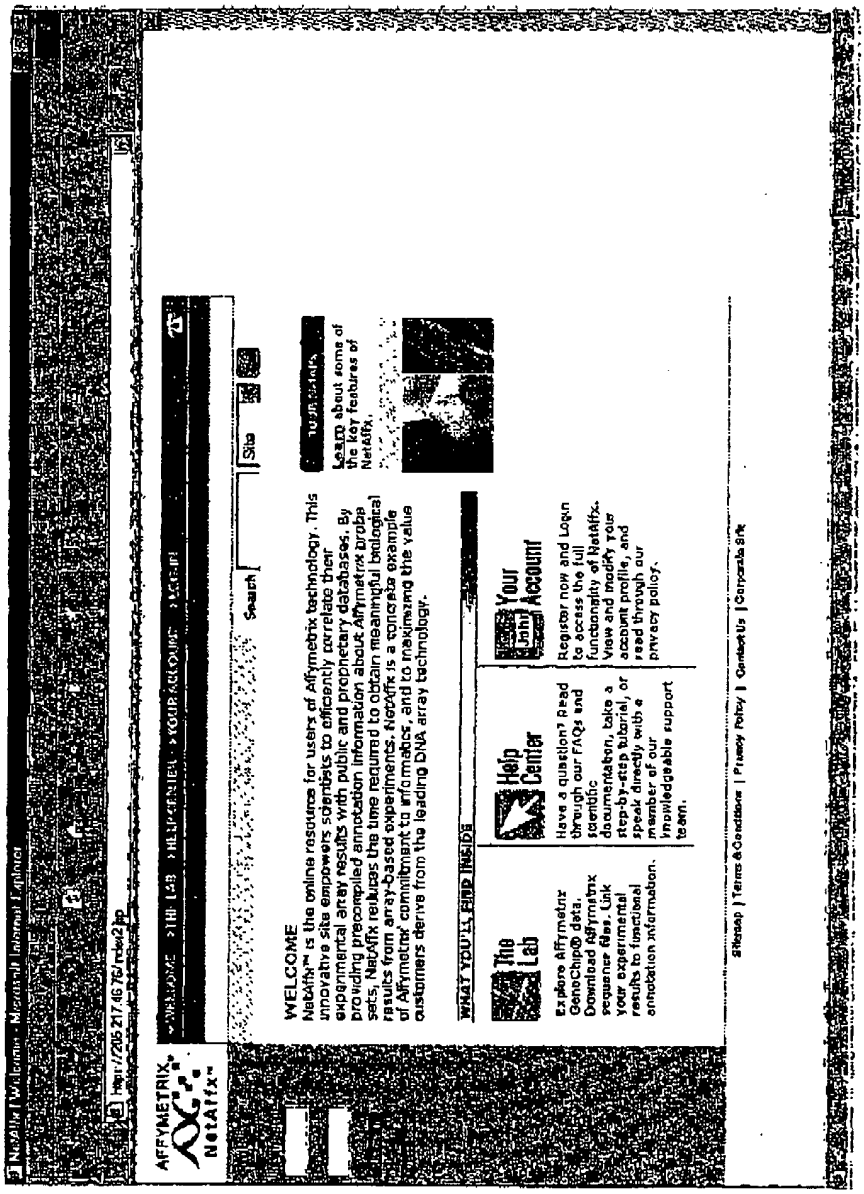
Login



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Login Error




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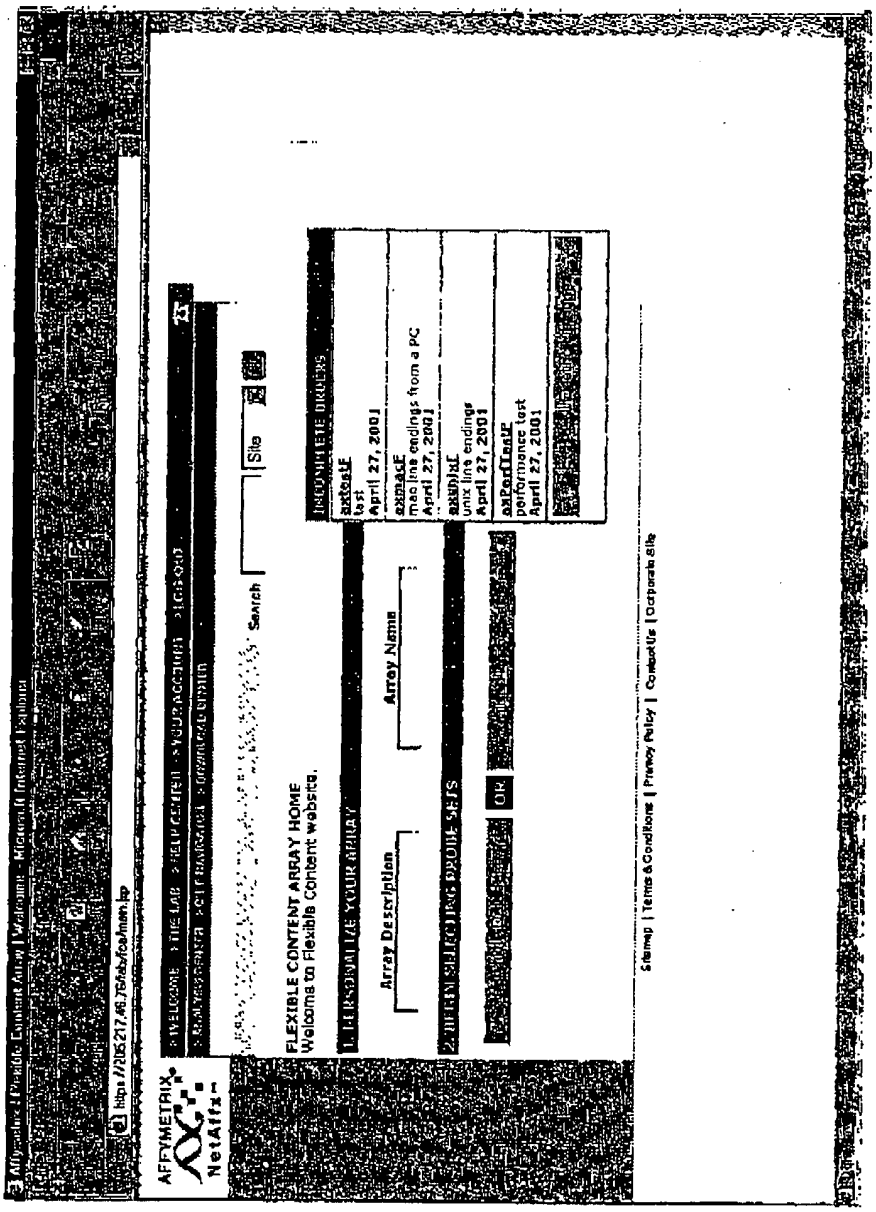
FCA Home



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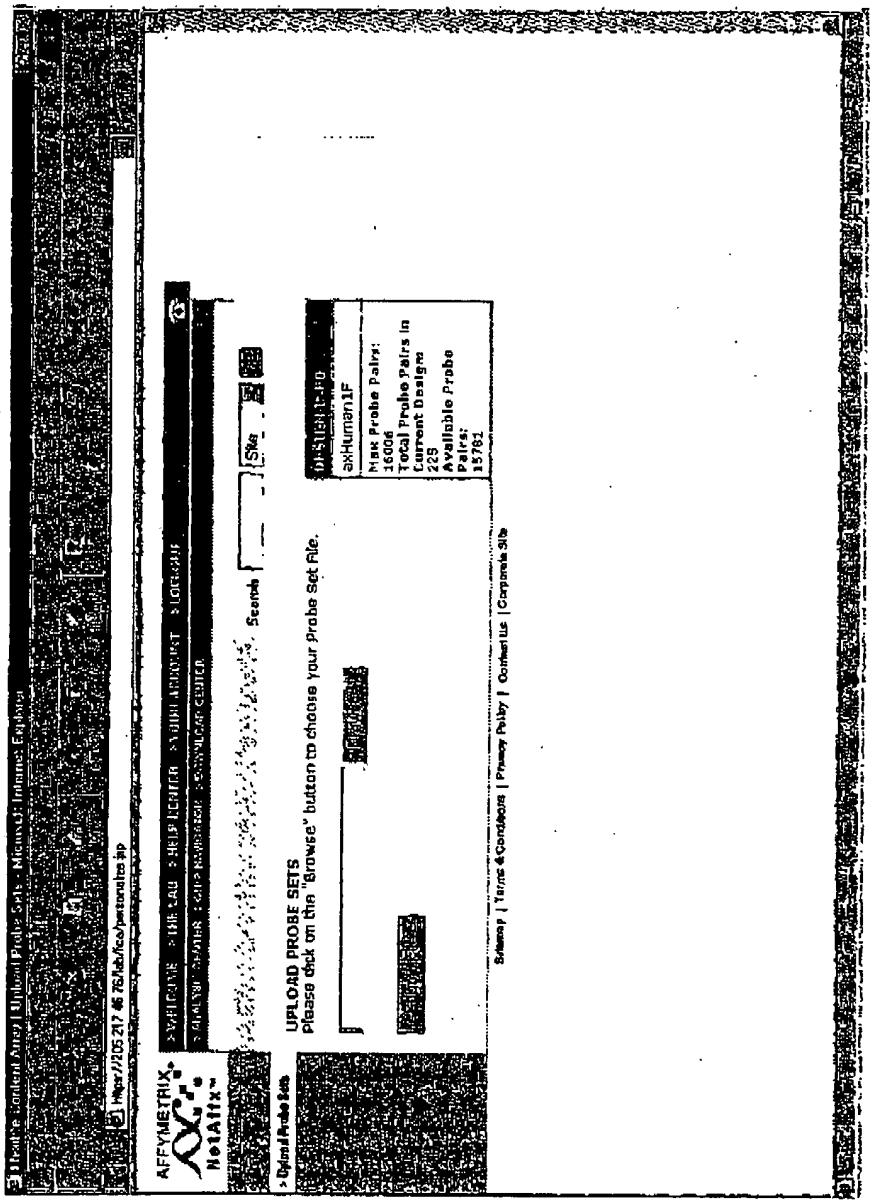
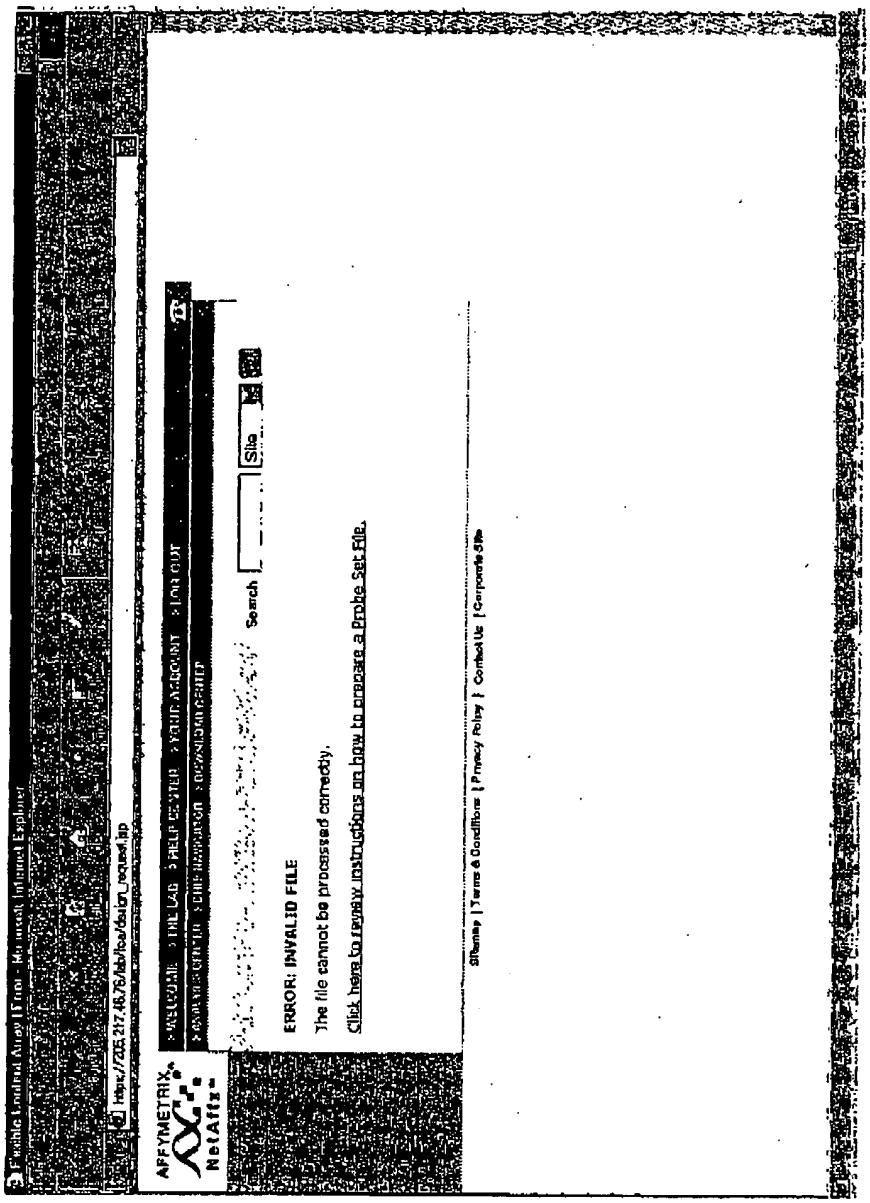
Upload


AFFYMETRIX
NetAffx
UPLOAD PROBE SETS
Please click on the "Browse" button to choose your Probe Set File.
Search
Max Probe Pairs:
1600
Total Probe Pairs in Current Design
225
Available Probe Pairs:
15781

27

Error – Invalid File



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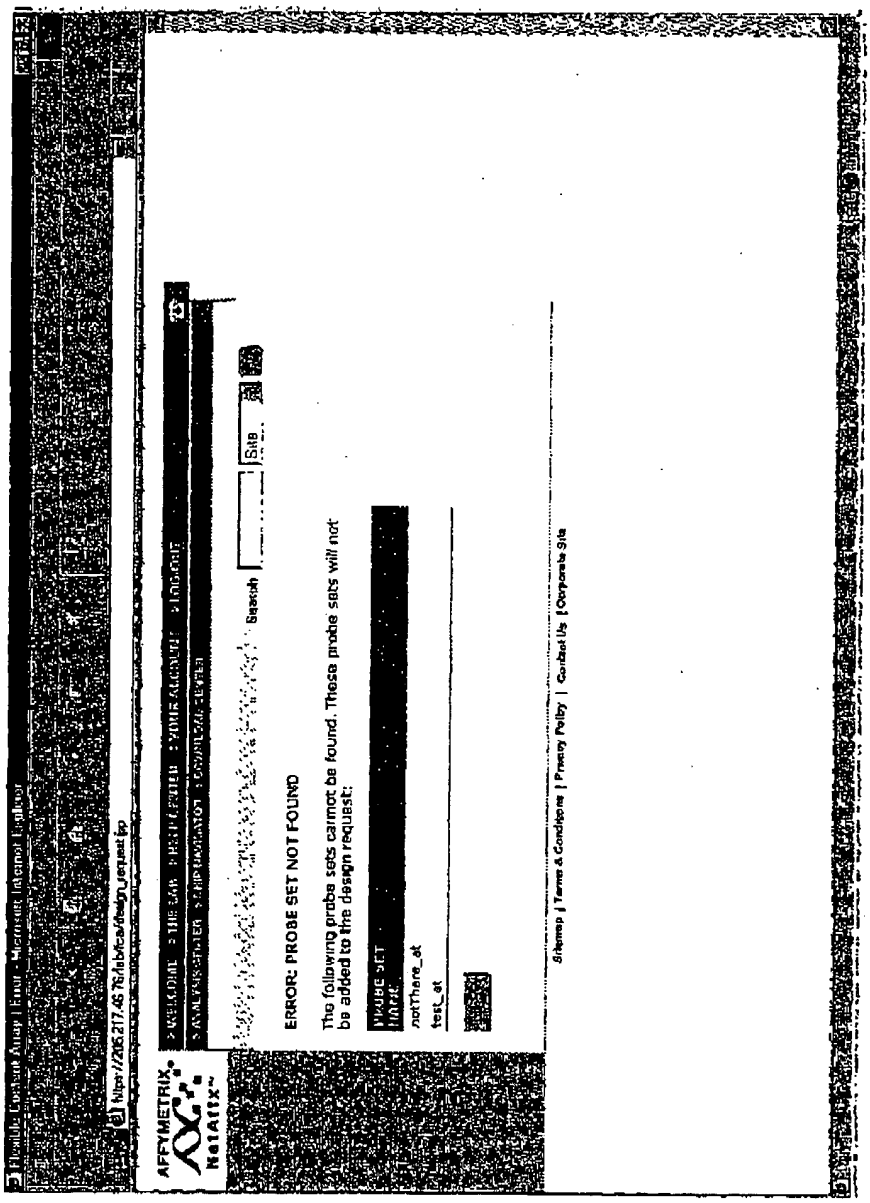
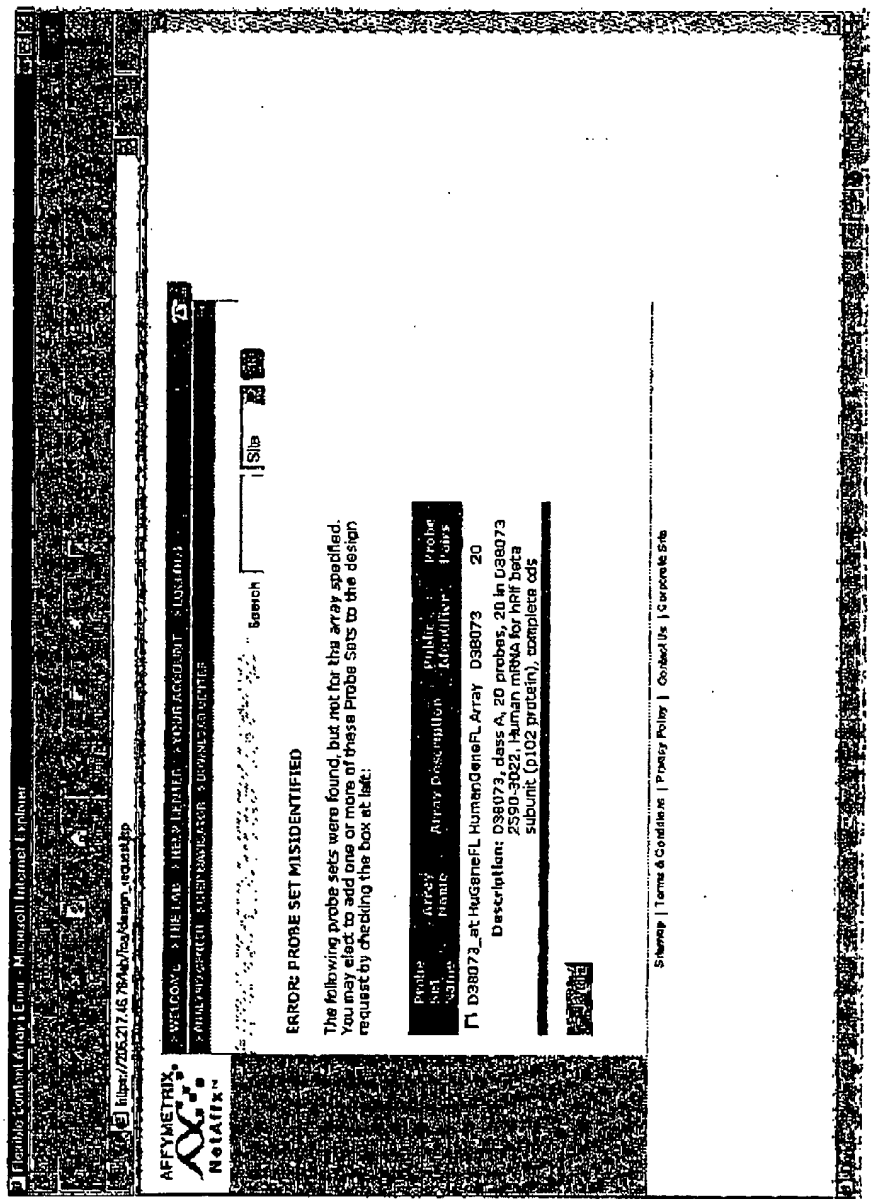
Error –Not Found




29

# Error –Misidentified




30

# Error - Duplicated




31

# Probe Set List

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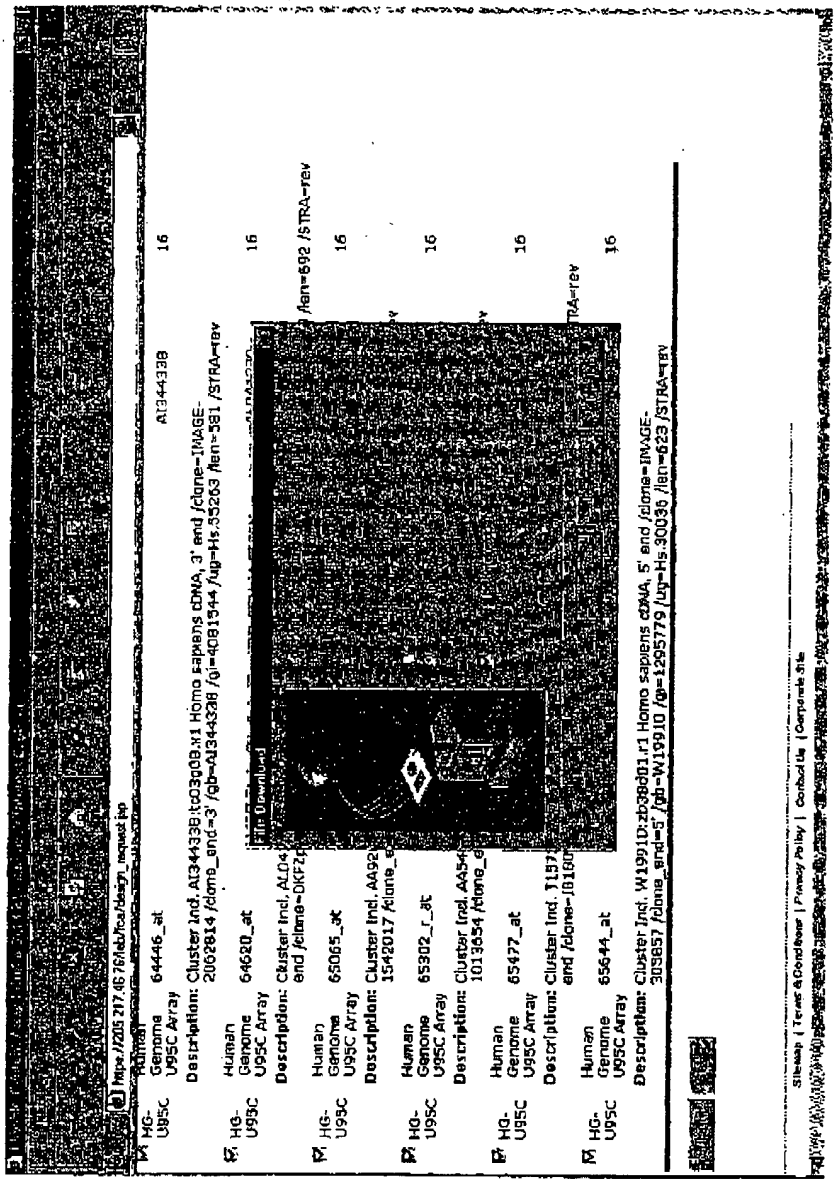
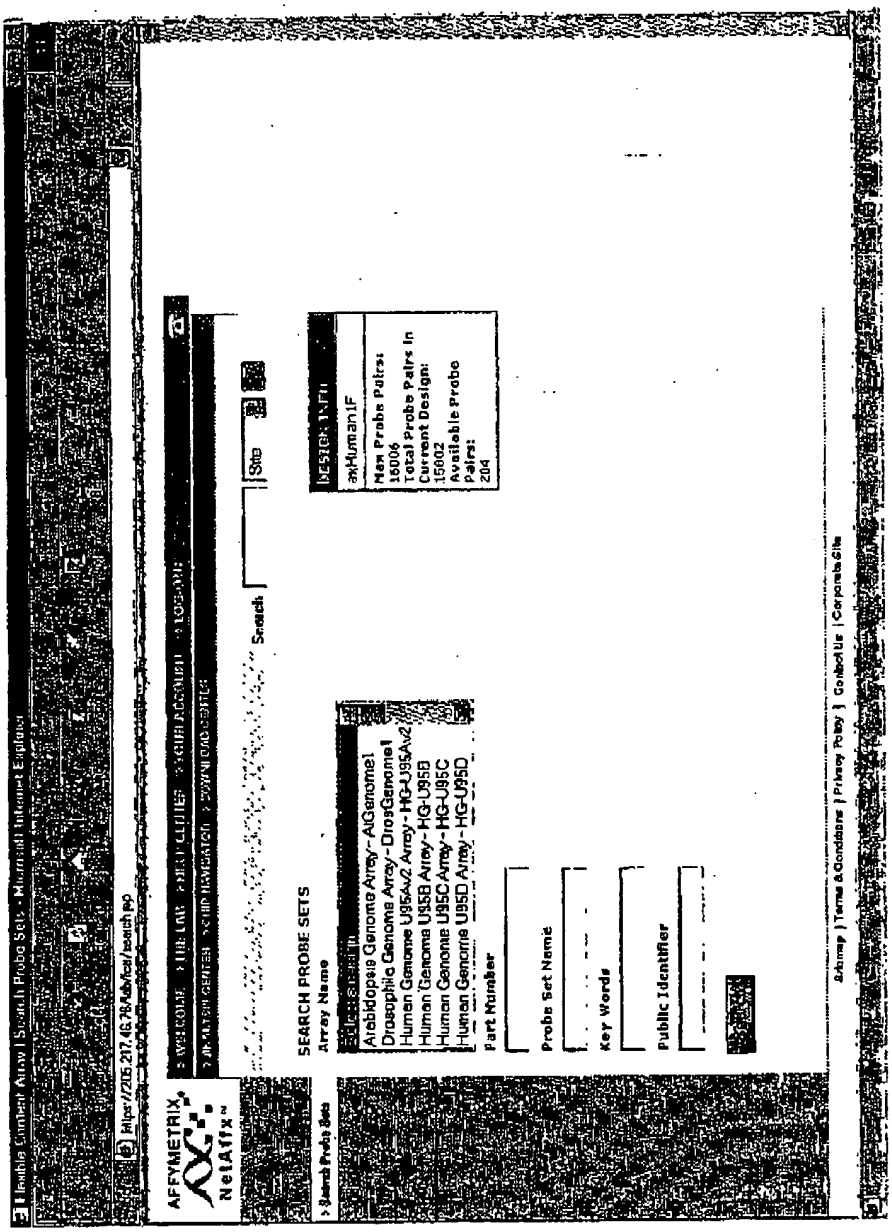
Probe Set List

Save File

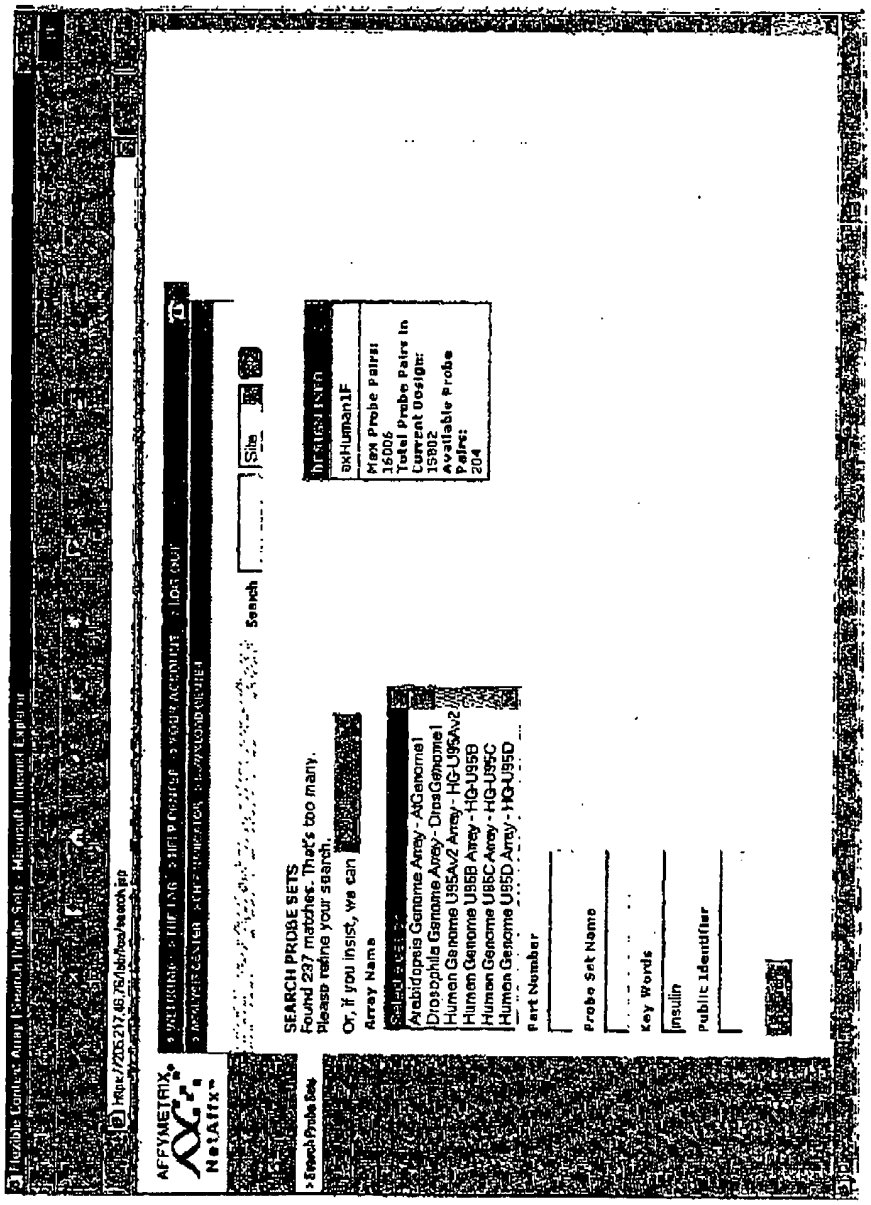


Search


AFFYMETRIX
NetAffx
SEARCH PROBE SETS
Array Name
Arabidopsis Genome Array - AtGenome1
Drosophila Genome Array - DrosGenome1
Human Genome U95Av2 Array - HG-U95Av2
Human Genome U95B Array - HG-U95B
Human Genome U95C Array - HG-U95C
Human Genome U95D Array - HG-U95D
Part Number
Probe Set Name
Key Words
Public Identifier
Search
Site
DESIGN INFO
anHumanIF
Max Probe Pairs:
16004
Total Probe Pairs in
Current Design:
15602
Available Probe
Pairs:
204

35

Search – too many



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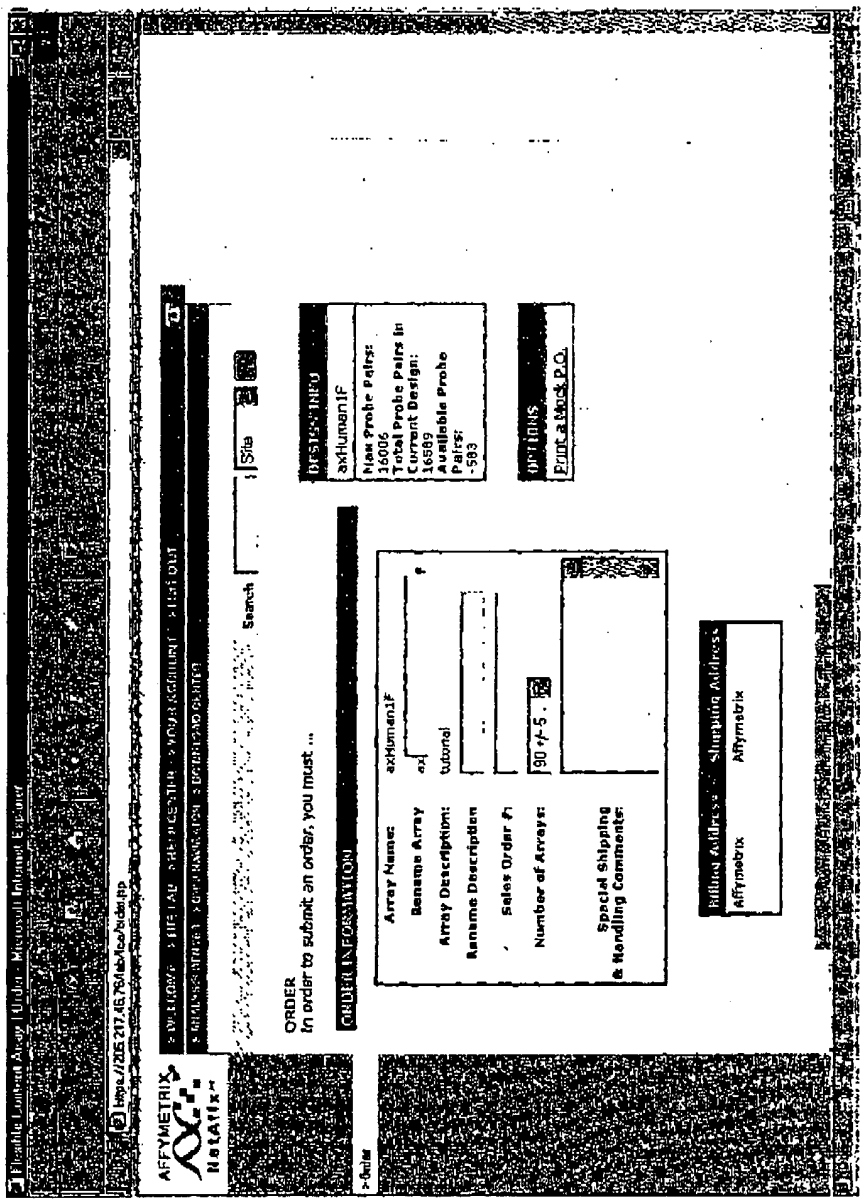
## Search Results

Order



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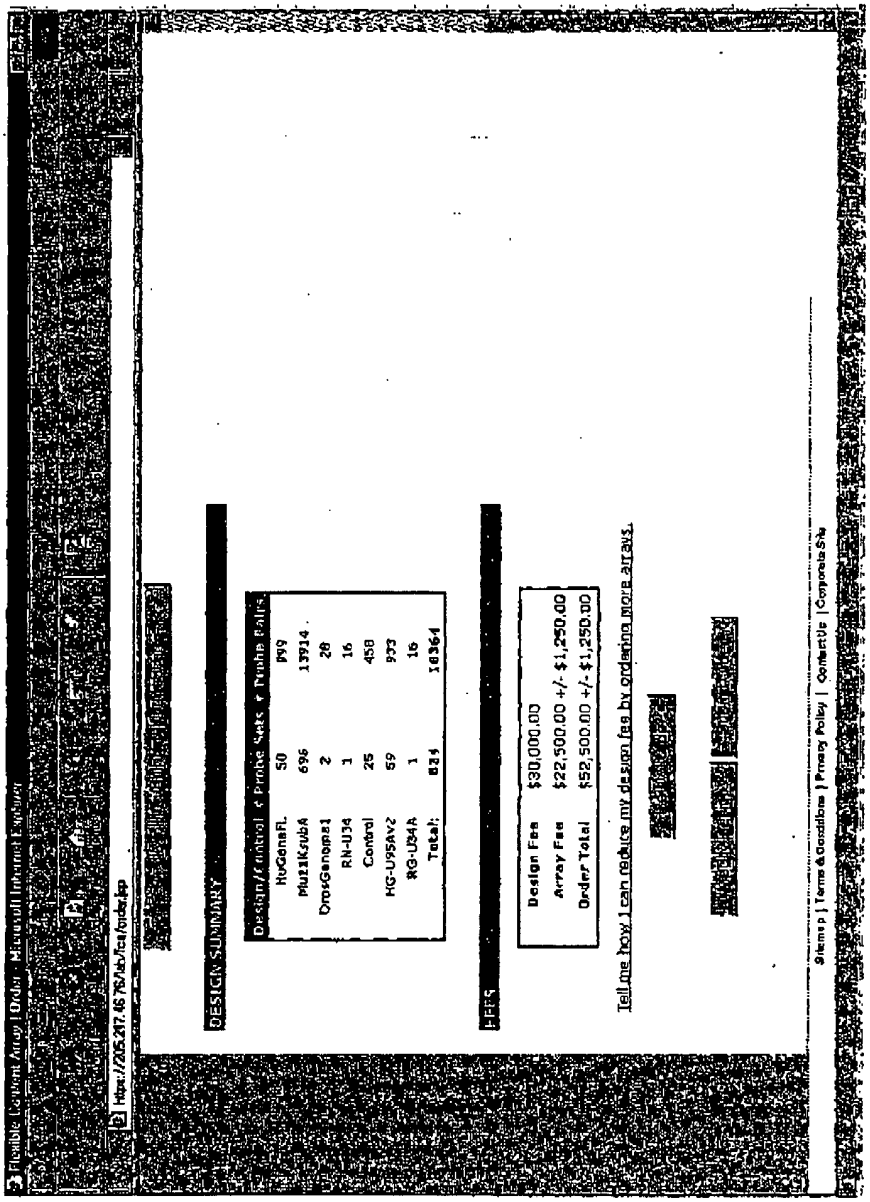
Order


DESIGN SUMMARY
Design/Control
HuGenaFL 50 999
Mut1Ksub4 696 13914
DrosGenome1 2 28
RN-U34 1 16
Control 25 458
HG-U95Av2 69 973
RG-U34A 1 16
Total: 824 16364
FEES
Design Fee $30,000.00
Array Fee $22,500.00 +/- $1,250.00
Order Total $52,500.00 +/- $1,250.00
Tell me how I can reduce my design fee by ordering more arrays.

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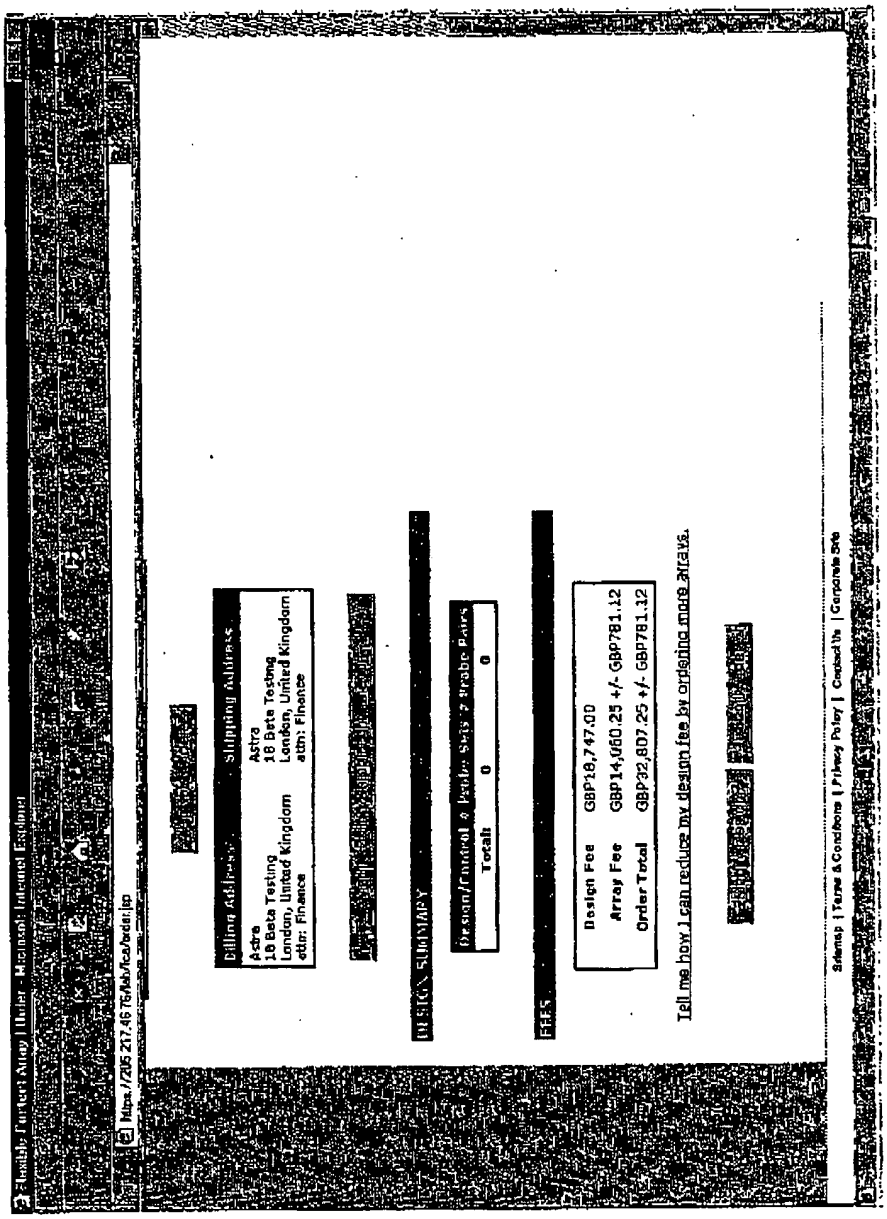
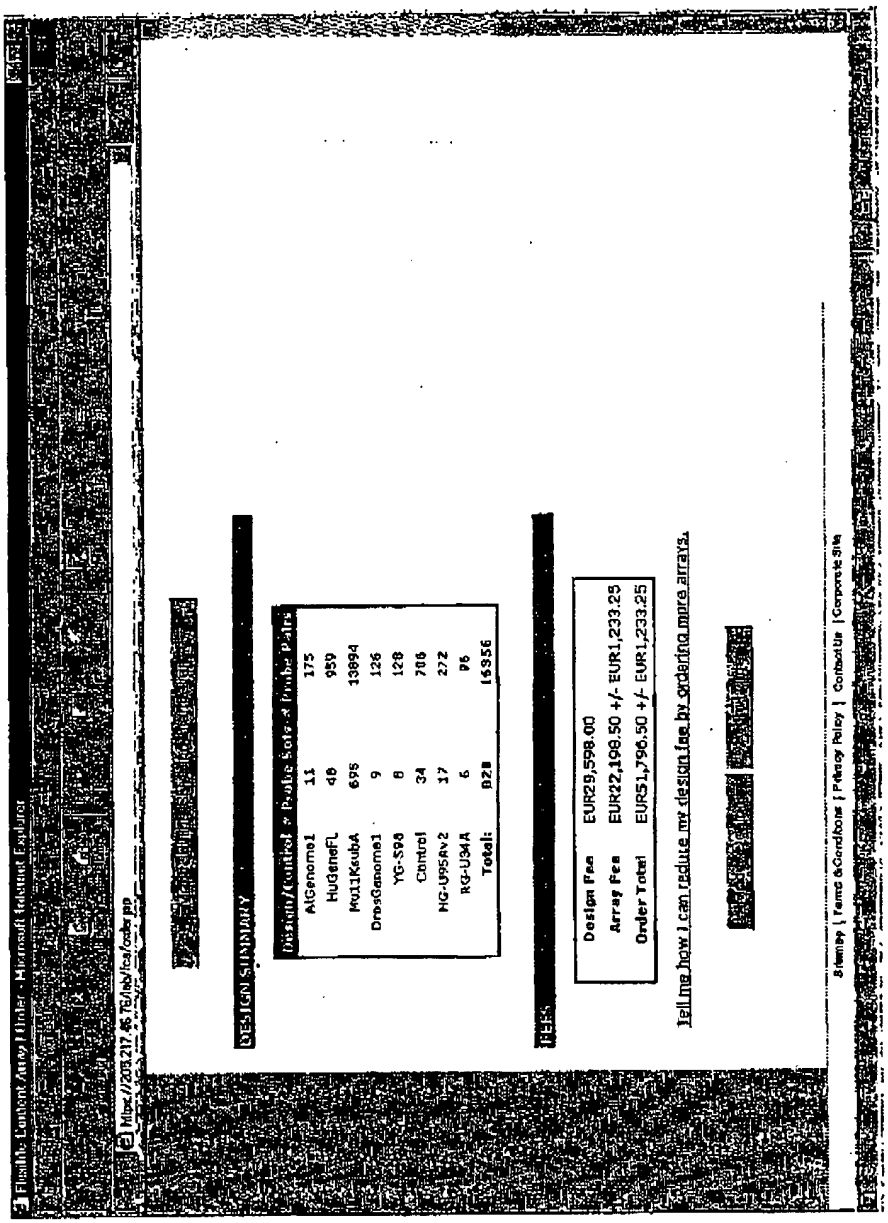
GBP


Billing Address
Shipping Address
Astra
16 Beta Testing
London, United Kingdom
attn: Finance
Design/Control & Probe Sets
Totals
0
0
FEES
Design Fee GBP18,747.00
Array Fee GBP14,060.25 +/- GBP781.12
Order Total GBP32,807.25 +/- GBP781.12
Tell me how I can reduce my design fee by ordering more arrays.

40


Flexible Content Array Finder - Microsoft Internet Explorer
https://209.217.46.76/feb/fca/code.jsp
DESIGN SUMMARY
Design/Control * Probe Sets * Probe Pairs
AtGenome1 11 175
HuGeneFL 48 959
HuX1KsubA 695 13894
DrosGenome1 9 126
YG-S98 8 128
Control 34 706
MG-U95Av2 17 272
RG-U34A 6 96
Total: 828 16356
FEES
Design Fee EUR29,598.00
Array Fee EUR22,198.50 +/- EUR1,233.25
Order Total EUR51,796.50 +/- EUR1,233.25
Tell me how I can reduce my design fee by ordering more arrays.
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Euro

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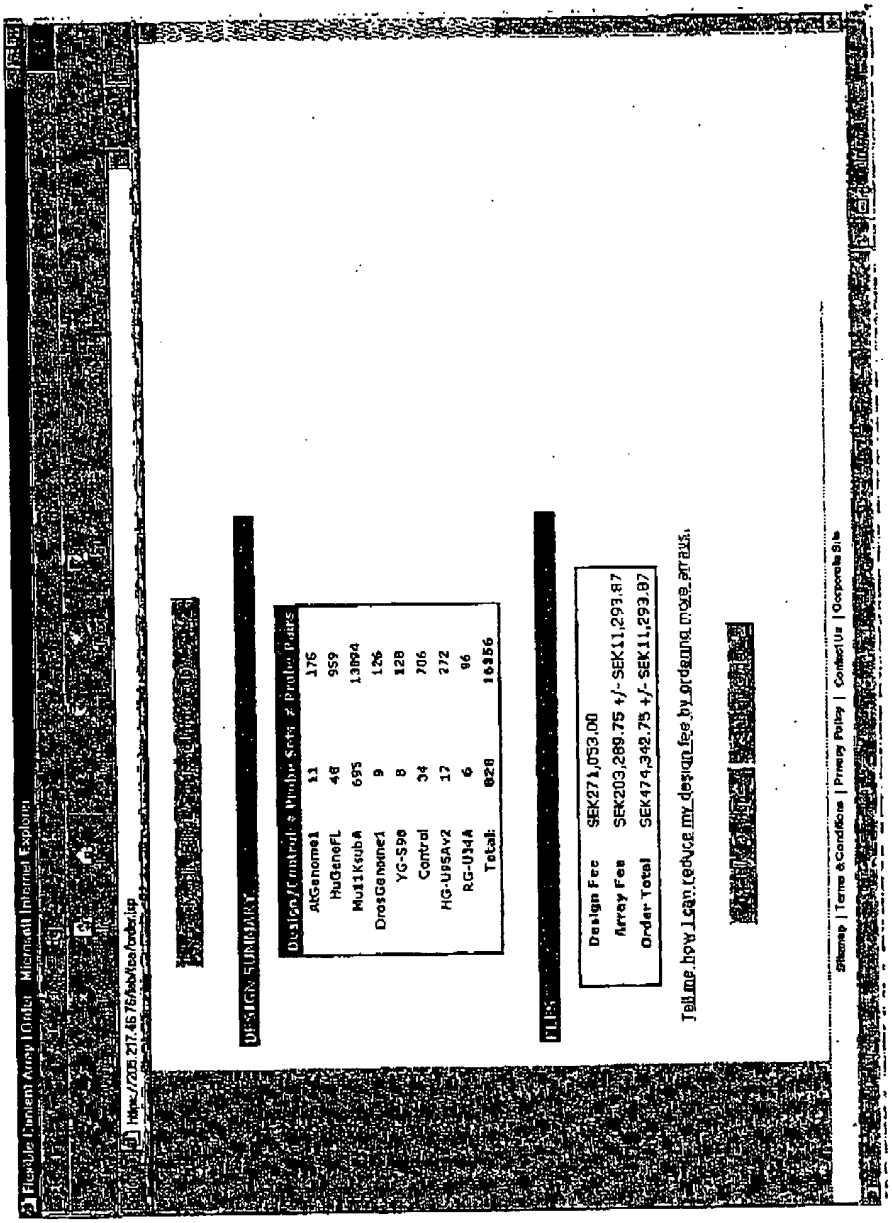
SEK


Flexible Custom Array | Order Microarray Internet Explorer
https://208.217.46.76/AbMice/order.jsp
DESIGN SUMMARY
Design/Control + Probe Sets = Probe Pairs
AtGenome1 11 176
HuGeneFL 48 959
MultiSubA 695 13894
DrosGenome1 9 126
YG-S98 8 128
Control 34 706
HG-U95Av2 12 272
RG-U34A 6 96
Total: 828 16356
Design Fee SEK271,053.00
Array Fee SEK203,289.75 +/- SEK11,293.87
Order Total SEK474,342.75 +/- SEK11,293.87
Tell me how I can reduce my design fee by ordering more arrays.
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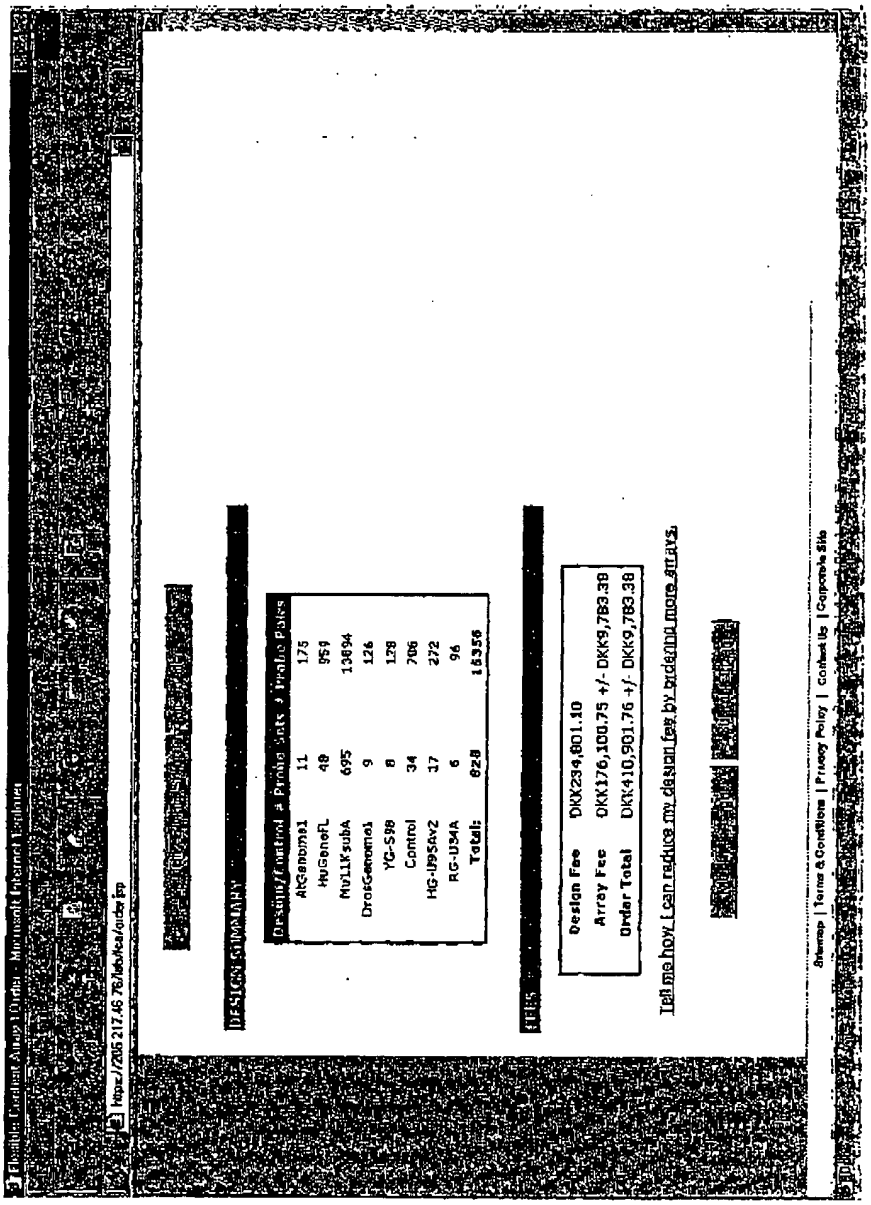
DKK


Flexible Custom Array Order - Microsoft Internet Explorer
https://205.217.46.76/adv/ca/order.jsp
DESIGN SUMMARY
Design/Control # Probe Sets # Probe Pairs
AtGenomic1 11 175
HuGenoFL 49 959
MuL1KsubA 695 13694
DroGenomic1 9 126
YG-S98 8 128
Control 34 706
HG-U95Av2 17 272
RG-U34A 6 96
Totals: 828 16356
Design Fee DKK234,801.10
Array Fee DKK176,100.75 +/- DKK9,783.38
Order Total DKK410,901.76 +/- DKK9,783.38
Tell me how I can reduce my design fee by ordering more arrays.
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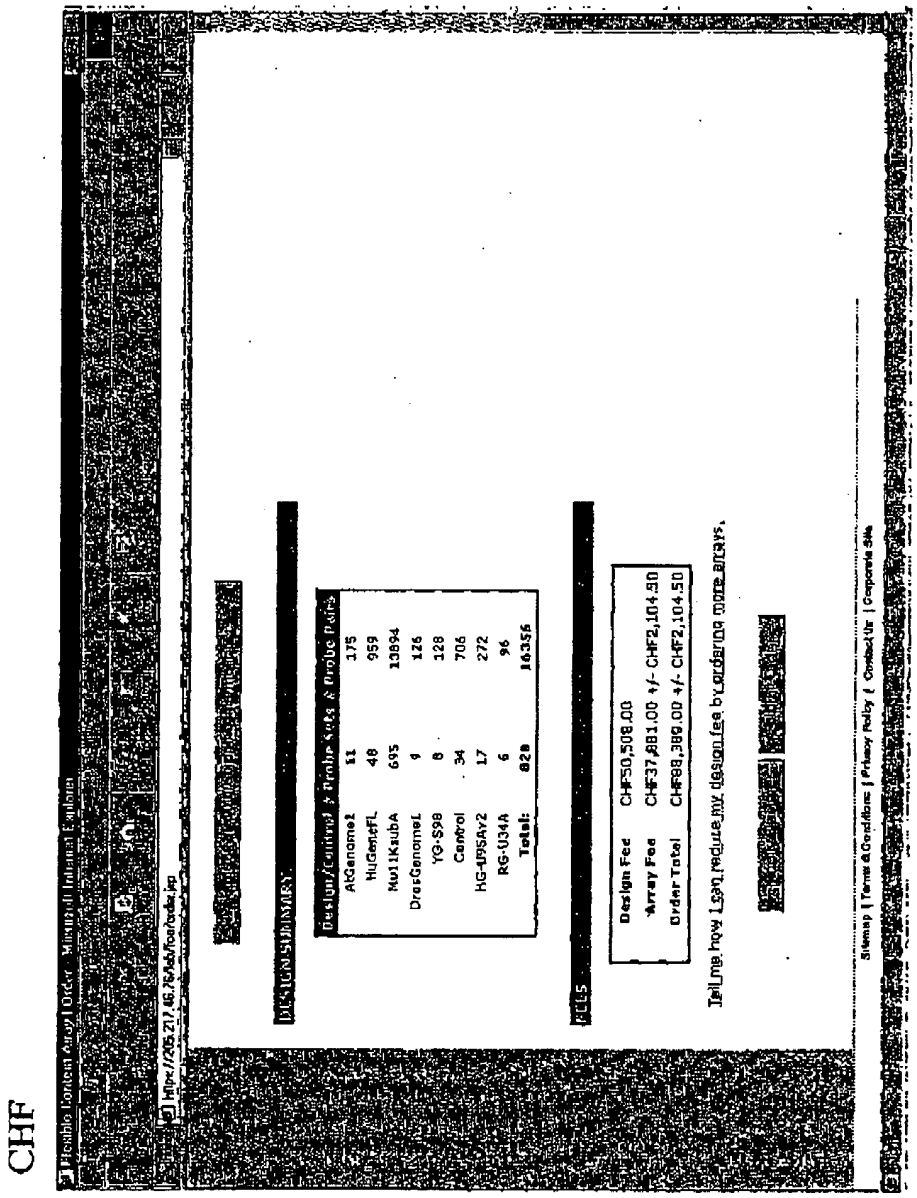
CHF
Flexible Content Array Order - Microsoft Internet Explorer
https://205.217.46.76/ads/toolbox.jsp
DESIGN SUBMISSION
Design/Control # Probe Sets # Probe Pairs
AtGenome1 11 175
HuGeneFL 48 959
HuU1KsubA 695 13894
DrosGenome1 9 126
YG-S98 8 128
Control 34 706
HG-U95Av2 17 272
RG-U34A 6 96
Total: 828 16355
FEES
Design Fee CHF50,508.00
Array Fee CHF37,881.00 +/- CHF2,104.50
Order Total CHF88,389.00 +/- CHF2,104.50
Tell me how I can reduce my design fee by ordering more arrays.
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Typed by: Stephen Beck

Mock PO






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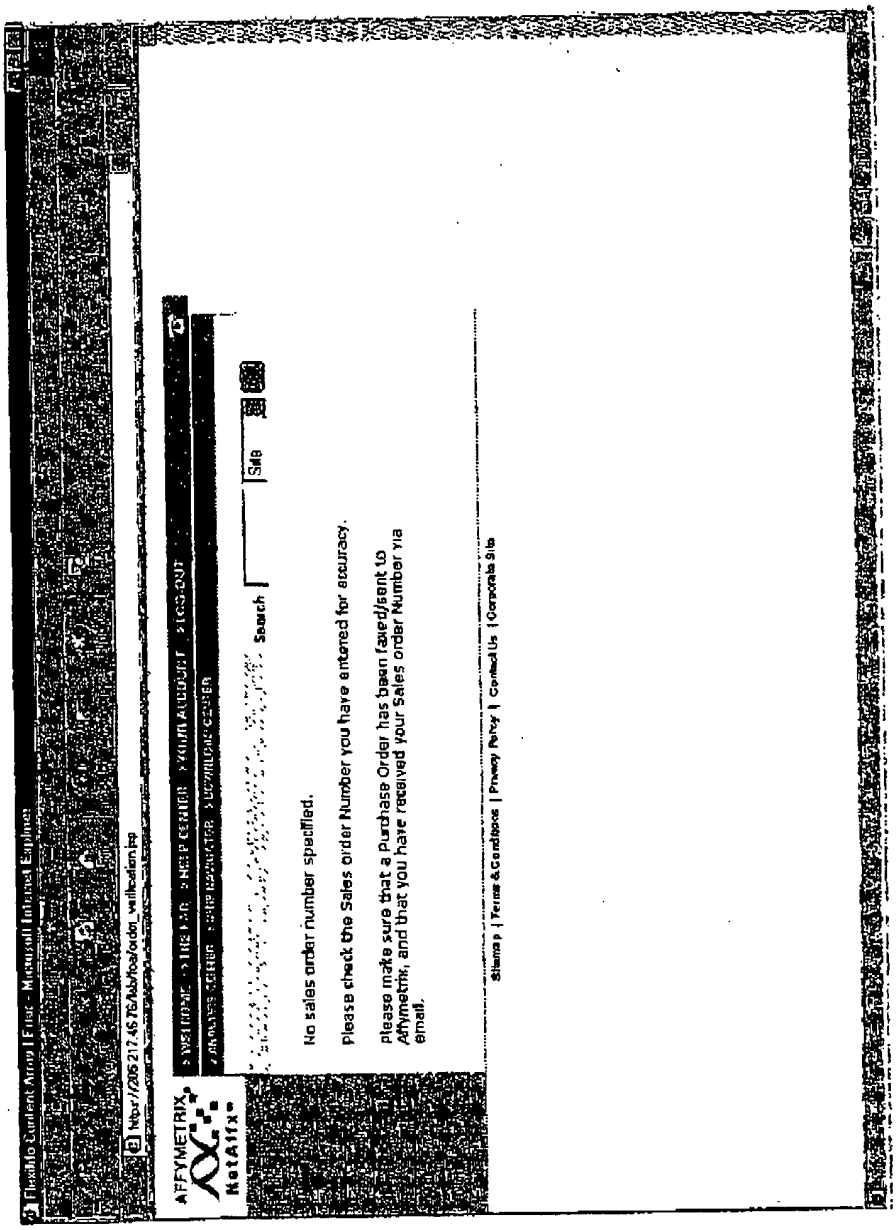
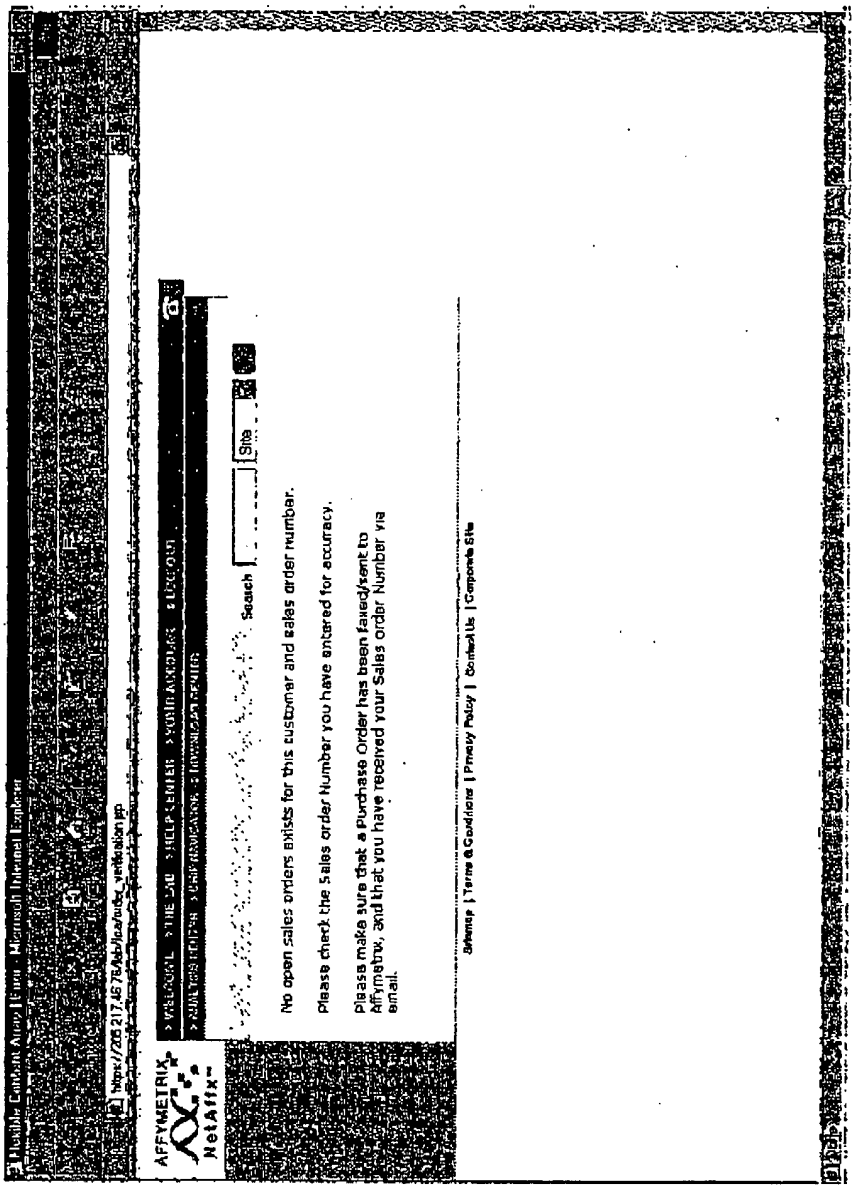
# Order – no Sales Order Number



Order – invalid SO#

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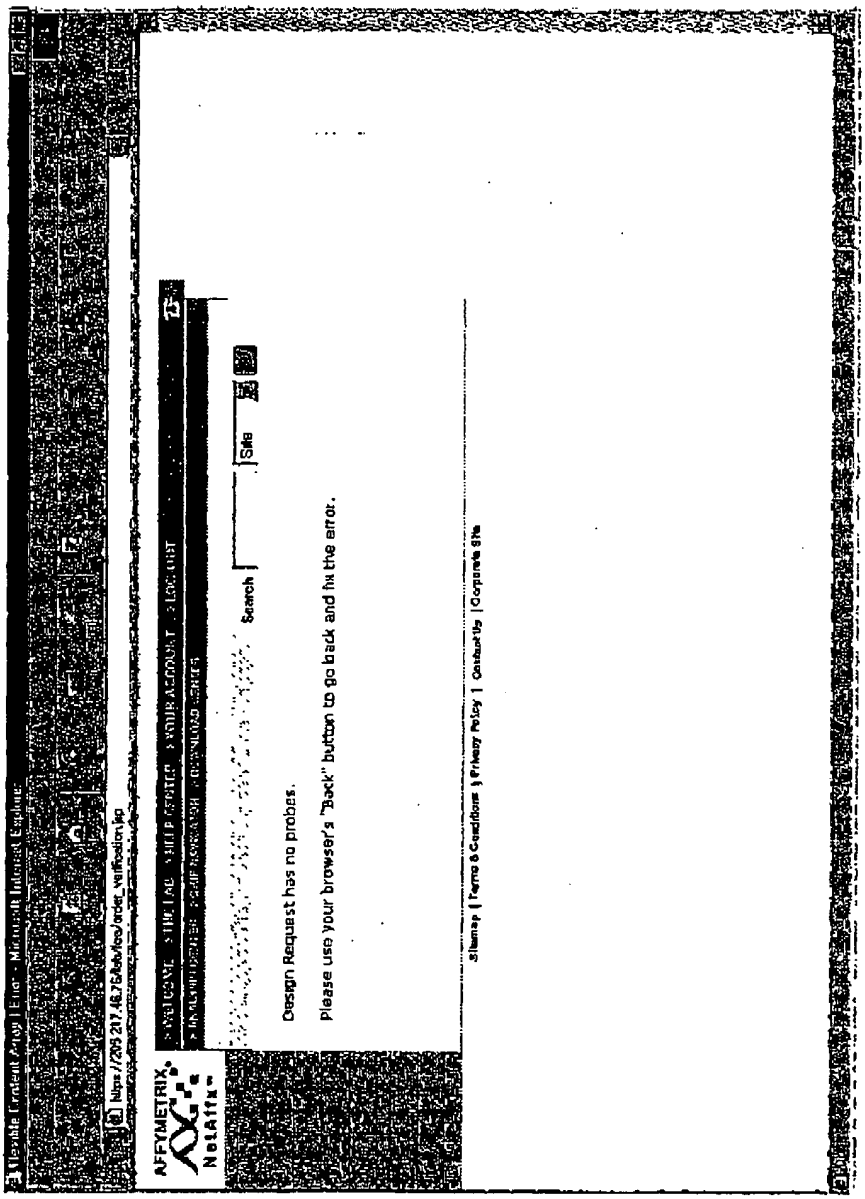
Order – no probes

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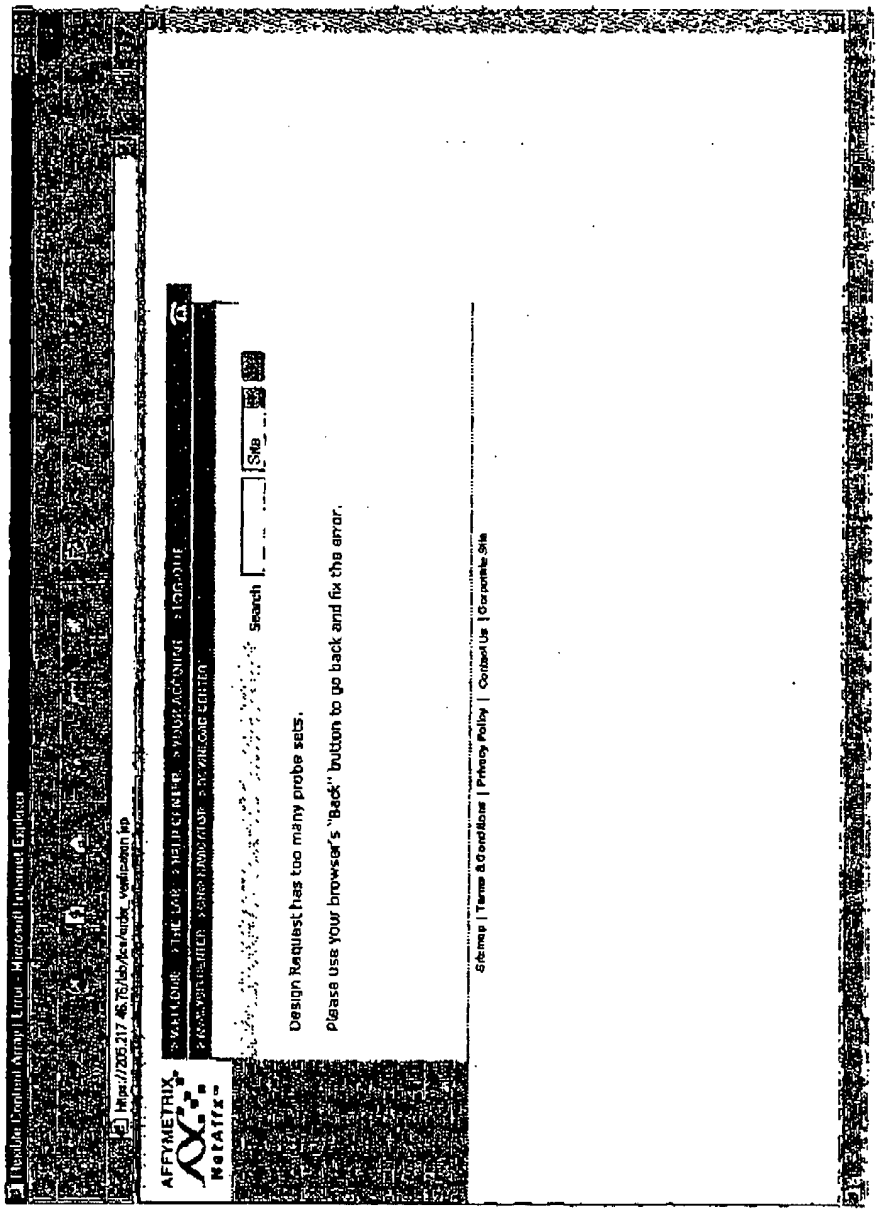
Order – too many



"Design" Section

Order Verification

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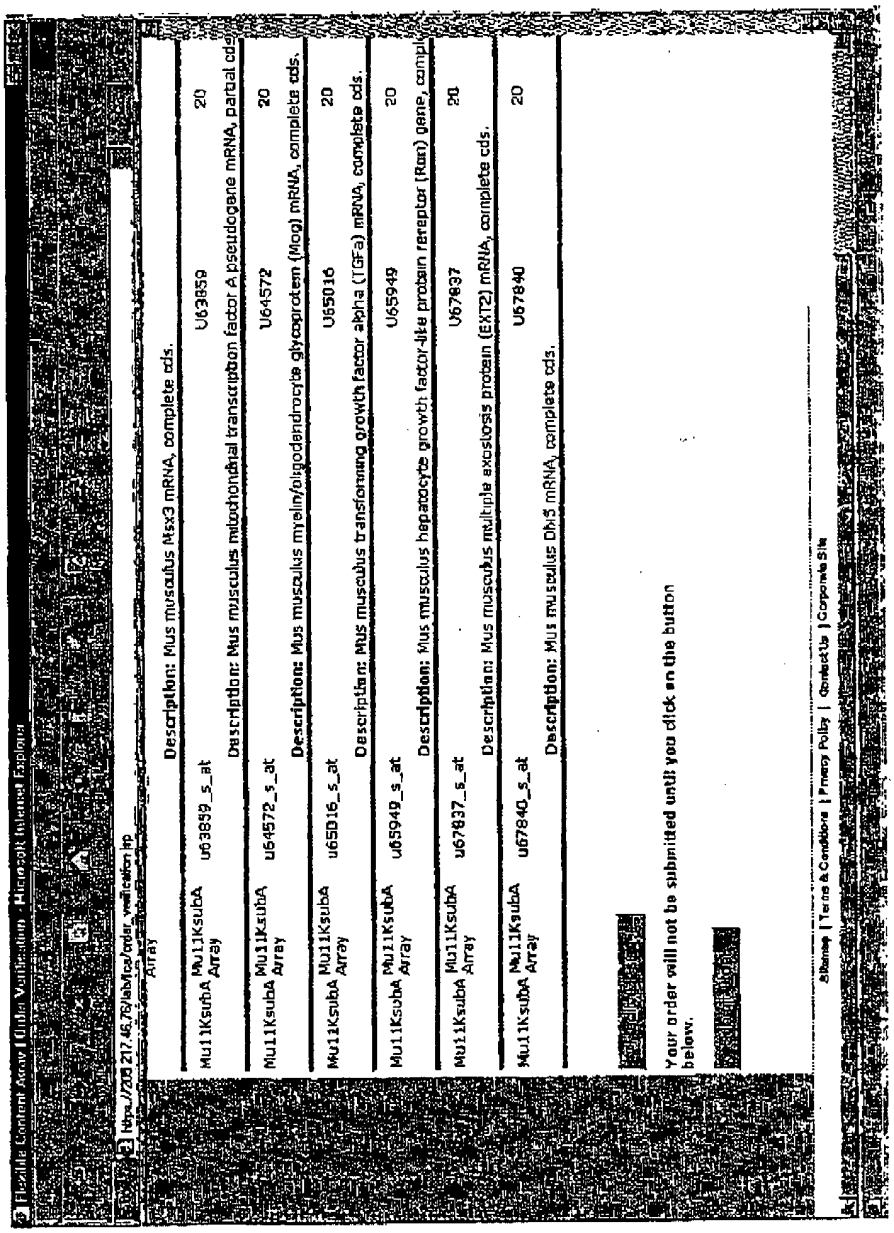
# Order Verification

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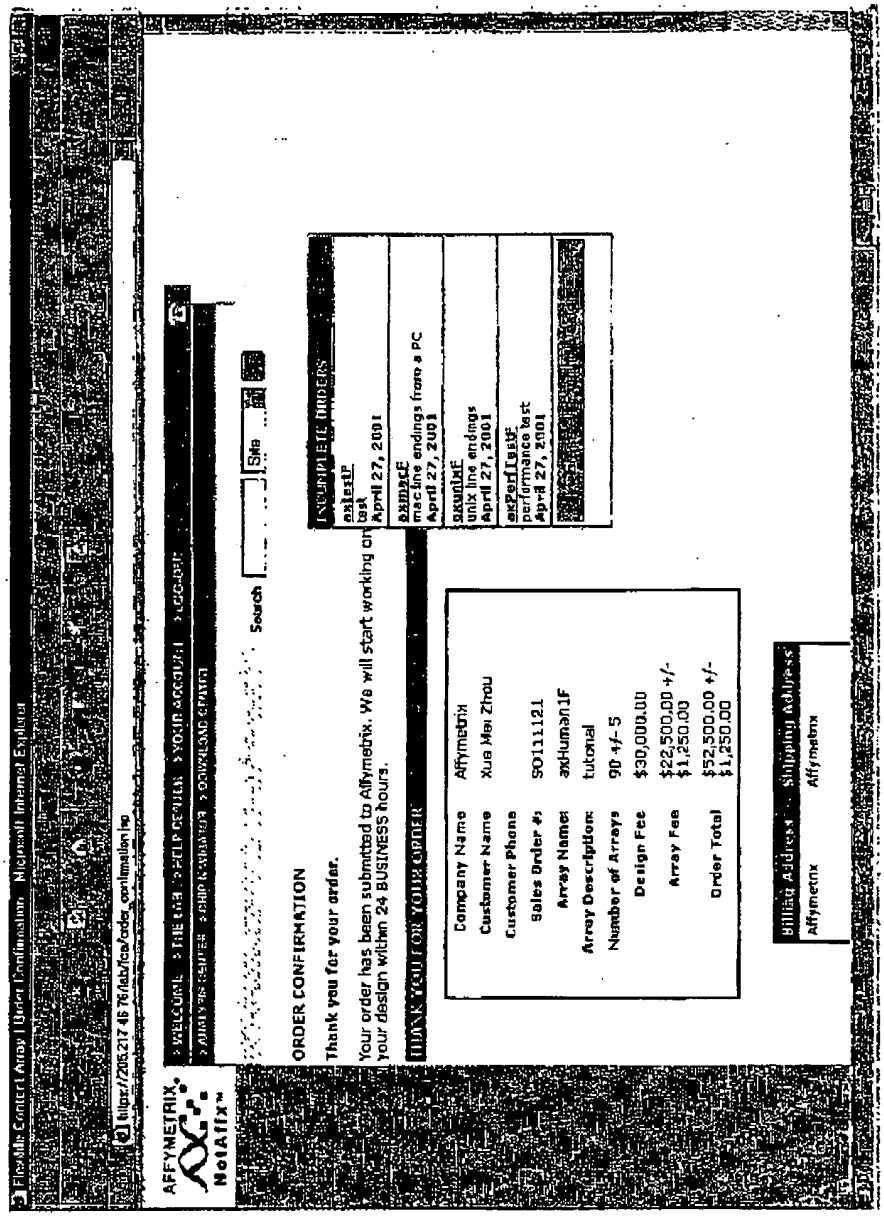
# Order Confirmation

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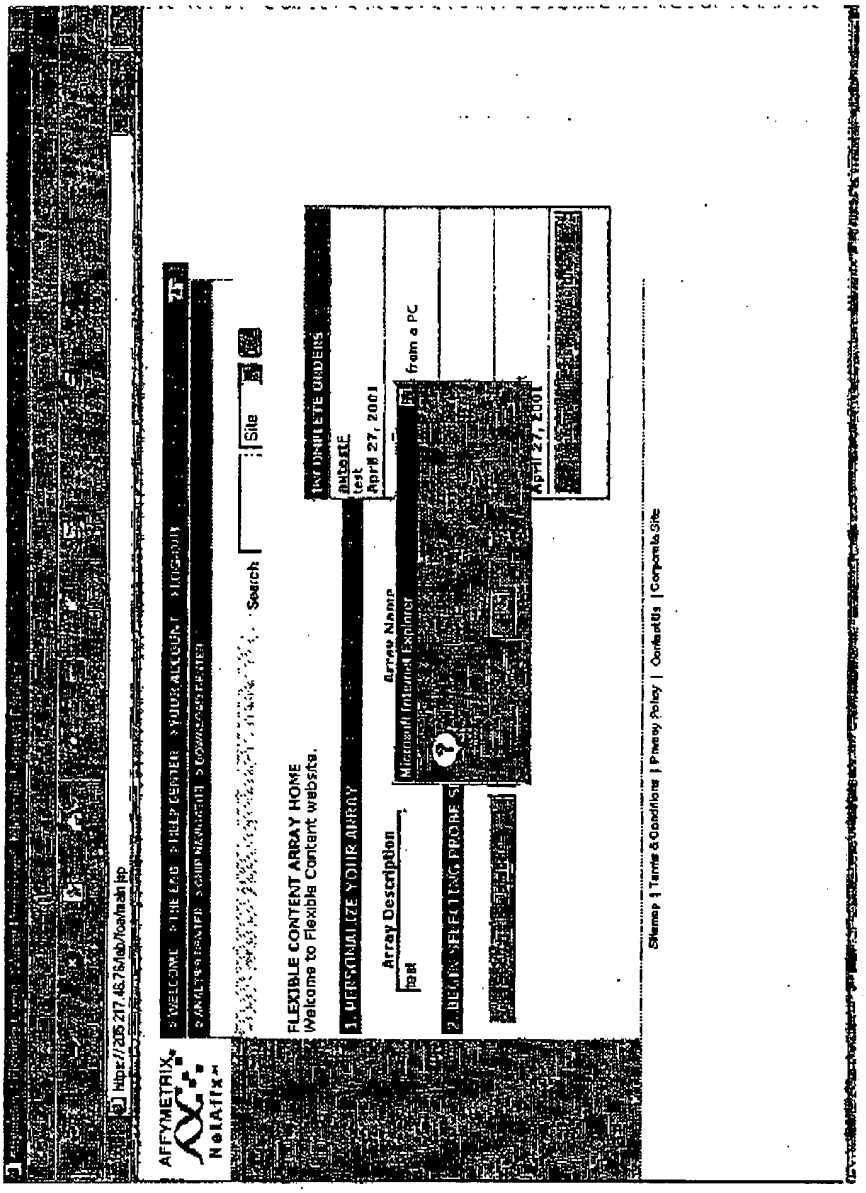
Delete Incomplete

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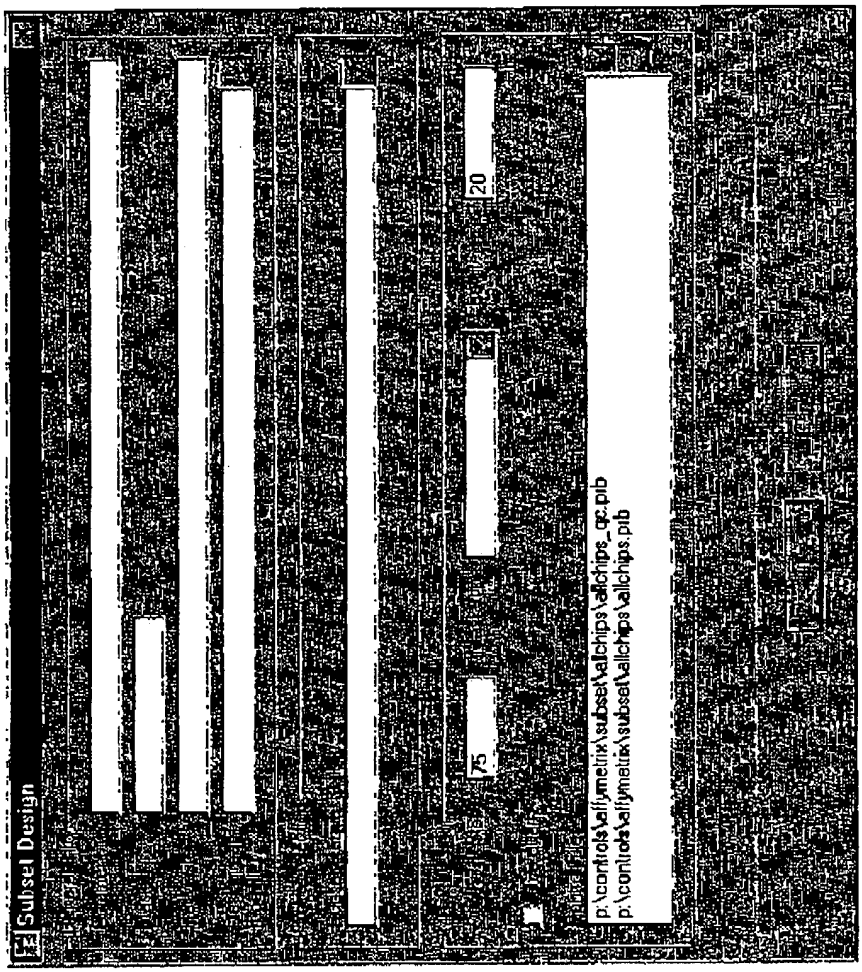
Tessera-86-27000.03

SubsetDesign




54